Advanced Installation Meter User's Manual

DIRECTV®

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Warranty

Trilithic, Inc. warrants that each part of this product will be free from defects in materials and workmanship, under normal use, operating conditions and service, for a period of fifteen (15) months from date of shipment. The obligation of Trilithic, Inc. under this warranty shall be limited, at the sole option of Trilithic, Inc., to replacing the product or repairing any defective part.

This warranty and the rights created hereunder are neither transferable nor assignable without the prior written consent of Trilithic, Inc.

Replaceable items such as batteries, soft cases, and input connectors, etc. are not included nor covered by this warranty.

The remedy set forth herein shall be the only remedy available to the Buyer under this warranty, and, in no event, shall Trilithic, Inc. be liable for incidental or consequential damages for any alleged breach of this warranty. This warranty shall not apply to any part of the product that, without fault of Trilithic, Inc., has been subsequently altered or modified, nor shall it apply to any failure caused by a part not supplied by Trilithic, Inc. and subsequently attached to or incorporated into the product. This warranty shall not apply to any damage caused by accident, fire, or other casualty, negligence, misuse, or to any cause whatsoever other than as a result of a defect directly attributable to Trilithic, Inc.

Except for the warranty and exclusions set forth above, and the warranties, if any, available to the buyer from those who supply Trilithic, Inc., there are no warranties, express or implied (including, without limitation, any implied warranty or warranty of merchantability of fitness for a particular purpose), with respect to the condition of the product.

Return Policy

Before returning a product for service, please call Trilithic Customer Service at 888-895-7630 for an RMA number. During this call, a Product Service Representative will schedule your unit for service, note the nature of the problem, and provide instructions for the return of your product.

All AIM service will be provided by Trilithic at:

Trilithic, Inc.
9710 Park Davis Drive
Indianapolis, In. 46235 USA
Phone: (888) 895-7630
Fax: (317) 895-3613
email: service@trilithic.com

1 Getting Started

Introduction

Congratulations on your new Advanced Installation Meter (AIM)! The AIM was developed in collaboration with DIRECTV to provide customized features for installing and troubleshooting DIRECTV satellite receiver systems.

The AIM is a rugged meter suitable for both indoor and outdoor use. When fully charged, the AIM can be used to install satellite receiver systems in approximately six single-family homes on a single charge. Both an AC power adapter and a convenient vehicle power adapter are provided for charging the meter. The carrying case protects the meter and its accessories during transport and storage.

The AIM's large display and keypad make it easy to navigate to the features you need. On-screen directions guide you through ODU installation, Extended Installation Verification (EIV), and other test processes.

The AIM lets you track information for each account, including account settings and test results. You can transfer this information from the meter to a PC using a USB flash drive. Using its USB connection, the AIM can be easily updated in the field as new features become available.

Using This Manual

Overview

Read this manual completely before using your AIM. Also, retain this manual for future reference.

For information to help you get started using your AIM, see the sections below:

- **Getting to Know Your Meter**, starting on page 5.

  This section provides an overview of the AIM, including information about the meter and its accessories, its display and buttons, and how to navigate through the screens on the meter.

- **Capturing a Screenshot**, starting on page 11.

  This section provides instructions for how to take a screenshot and save it for reference later.

- **Powering Your Meter**, starting on page 12.

  This section provides instructions for how to turn on and turn off the meter, an overview of the meter's power-saving features, and instructions for how to charge the battery and replace the battery.

- **Getting Technical Support**, starting on page 19.

  This section describes how to access technical support.

- **Safety Instructions**, starting on page 20.

  This section provides important safety instructions for using the AIM.

- **Technical Specifications**, starting on page 21.

  This section provides information about the dimensions, capabilities and operating range of the AIM.

- **Spare Parts List**, starting on page 22.

  This section provides a list of replacement parts that can be ordered for the AIM.

Instructions for using the AIM's features are provided in the following chapters:

- **Chapter 2: Setting Up the Meter**, starting on page 23.

  Before you use your AIM, you need to enter registration information and confirm the meter's settings. This chapter provides instructions for entering registration information, as well as setting the meter's volume, display contrast and brightness, time limits for power-saving features, and date and time.

- **Chapter 3: Setting Up a Job**, starting on page 32.

  Before you perform tasks for an installation using the AIM, you can set up the information for the job. This chapter provides instructions for entering the account number, selecting the ODU type, selecting the switch type, and entering the zip code.

- **Chapter 4: Installing an ODU**, starting on page 39.

  The AIM guides you through the steps for aligning and performing follow-up Extended Installation Verification (EIV) for each ODU. This chapter provides instructions for how to complete these processes using the AIM.

- **Chapter 5: Performing EIV**, starting on page 49.

  You can perform Extended Installation Verification (EIV) at selected points in the distribution network to quickly confirm that the installation is satisfactory for all supported orbital slots. EIV is an easy way to pinpoint any potential problems with the installation. This chapter provides instructions for performing EIV at the ODU and other locations in the distribution network.

- **Chapter 6: Performing Other Network Tests**, starting on page 52.

  If there is a problem with a DIRECTV installation, you can run network tests to help you troubleshoot the problem. This chapter provides instructions for performing tests including Guided Mode, EIV Plus, In-Line test, Satellite Tune test, SWiM LF Power test, Cable Resistance test, and Transponder Survey.

- **Chapter 7: Managing Records**, starting on page 79.

  The AIM stores records for tests performed on the AIM, as well as screenshots. This chapter provides instructions for how to view records, delete records, and transfer records to or from the AIM using a USB flash drive.

- **Chapter 8: Updating the Meter**, starting on page 92.

  You can update the AIM as new features become available. This chapter provides instructions for updating the meter's firmware.

Conventions

The following conventions are used in this manual to help guide you through the features of the AIM:

- Each screen is referenced by the name that appears in the title bar.
- Words that appear on the screen (titles, on-screen options and softkey labels) are shown in **bold**.
- The instructions describe how to navigate through the AIM's features using the meter's softkey buttons. However, you also can use other meter buttons for navigation (including the arrow buttons, alphanumeric buttons, and OK button). For more information, see page 10.
- To make instructions easy to read, buttons are referenced only by their label. For example:

  Press **NEXT** to continue.

Figure 1 Front View

Getting To Know Your Meter

Features

Your AIM has the following features:

Connectors

1 IRD F connector

2 ODU F connector

3 Type A USB connector (Standard)

4 Type B USB connector (Mini)

5 Power input

Buttons

6 Softkeys

7 Navigation keypad

8 Alphanumeric keypad

9 Operation buttons

10 Power

Other

11 LCD display

Figure 2 Back View

12 Speaker

13 Meter serial number

Figure 3 Meter Accessories

Accessories

Your AIM comes with the following accessories. If any of the following items are missing, contact your supplier.

1 Carrying case (with shoulder strap and storage pocket)

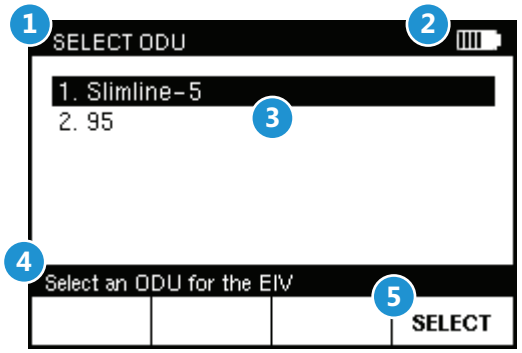
2 100 – 240 VAC power adapter

3 12 VDC vehicle power adapter

4 25 Ω Cable Test Load

5 512 MB USB flash drive (containing *AIM User's Manual*)

Figure 4 Meter Display



Display

The AIM has a large LCD display with a backlight for easy readability. Each screen that appears on the display has the following:

1 **Title bar:** Indicates the screen that is displayed.

2 **Battery icon:** Indicates the power level of the battery.

3 **Main area:** Shows information about the task being performed.

4 **Message bar:** Provides: (a) instructions to guide you through the task being performed; or, (b) status messages.

5 **Softkey labels:** Indicate options that vary based on the screen shown. To select an option, press the button below that option.

Buttons

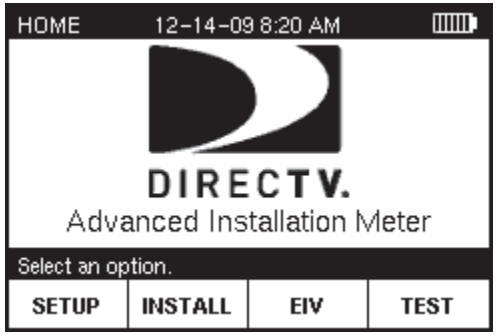
The following buttons let you interact with the meter:

- **4 softkeys:** Select options that correspond to the on-screen labels above.
- **4 arrows:** Let you navigate up and down to select an option in a list, as well as right or left when entering information.
- **OK:** Selects the option highlighted on the screen.
- **10 alphanumeric buttons:** Let you enter text or select a numbered list option.
- **Back:** Lets you go back to the previous screen.
- **Fn:** Lets you quickly change the display contrast, display brightness, and volume, enable Rain Mode, and capture screenshots.
- **CONFIG:** Lets you view, delete and transfer records, change meter settings, and upgrade the meter's firmware. (For more, see page 23, page 79, and page 92.)
- **HOME:** Displays the HOME screen. (For more, see page 11.)
- **HELP:** Displays instructions to help you complete the task being performed.
- **MUTE:** Turns on and off the sound on the meter.
- **POWER:** Lets you turn on and off the meter (with a long press) or backlight (with a quick press).

Navigation

Keep in mind the following guidelines when using the meter buttons to navigate through the AIM's features:

- *To select a softkey option*, press the button below that option.
- *To highlight an option in a list*, do one of the following:
  - Use the arrow buttons to highlight the option.
  - Use the alphanumeric keypad to enter the number for the option.
- *To select a highlighted option in a list*, do one of the following:
  - Press the **NEXT** or **SELECT** softkey (based on the screen)
  - Press the **OK** button.
- *To return to the **HOME** screen*, do one of the following:
  - Press the **DONE** softkey (if available)
  - Press the **HOME** button.
- *To return to the previous screen*, do one of the following:
  - Press the **BACK** softkey (if available)
  - Press the **BACK** button.

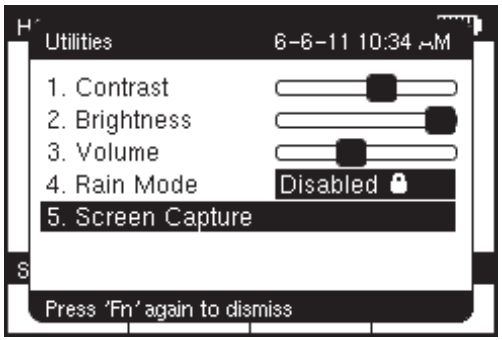


HOME Screen

The HOME screen lets you access the AIM's main features. You can press the **HOME** button at any time to access the **HOME** screen.

The HOME screen provides four softkeys that correspond to each of the main features of the AIM:

- **SETUP**: Lets you set up the information for a job. See "Setting Up a Job" on page 32.
- **INSTALL**: Guides you through the steps for aligning and performing follow-up Extended Installation Verification (EIV) for each ODU. See "Installing an ODU" on page 39.
- **EIV**: Guides you through the steps for performing Extended Installation Verification (EIV) at the ODU or another location to help you troubleshoot a problem. See "Performing EIV" on page 49.
- **TEST**: Lets you run network tests to help you troubleshoot a problem with an installation. See "Performing Other Network Tests" on page 52.



Capturing a Screenshot

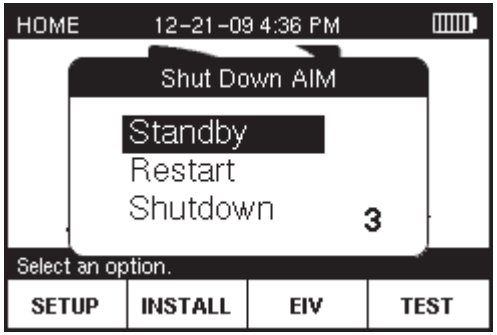
If at any time you encounter a screen you want to save for reference later, you can take a screenshot and save it as a record.

To capture a screenshot:

Press **Fn** and then **5**, ***OR***

Press **Fn**. Use ▲ or ▼ to highlight **Screen Capture**, then press **OK**.

The screenshot is automatically saved as a record on the AIM. For instructions on viewing a screenshot, see "Viewing Records" on page 81.



Tip: You have 3 seconds to make a selection on the **SHUT DOWN AIM** screen before the meter automatically turns off.

Powering Your Meter

Power-On

To turn on the AIM, press and hold the **POWER** button until the backlight turns on and the meter sounds a tone. The meter turns on, briefly displays a splash screen, and then displays the **HOME** screen.

To start a job, press **SETUP** and follow the instructions in "Starting a Job" on page 33.

Standby Mode

You can place your AIM in a power-saving state called **Standby** mode. Standby mode lets you turn off the AIM display and other features to extend the charge of the battery. You can quickly exit Standby mode and resume working on the screen where you left off.

To enter Standby mode:

1 Press and hold the **POWER** button until the **SHUT DOWN AIM** screen appears.

2 Use ▲ or ▼ to highlight **Standby** and press **OK**.

The meter enters Standby mode.

To exit Standby mode:

Press the **POWER** button.

Restart

To restart the AIM:

1 Press and hold the **POWER** button until the **SHUT DOWN AIM** screen appears.

2 Use ▲ or ▼ to highlight **Restart** and press **OK**.

The meter turns off, and then automatically turns back on.

Power-Off

To turn off the AIM:

1 Press and hold the **POWER** button until the **SHUT DOWN AIM** screen appears.

2 Use ▲ or ▼ to highlight **Shutdown** and press **OK**.

The meter turns off.

Hard Reset

If the AIM is unresponsive to button presses, perform a hard reset.

To perform a hard reset:

1 Press and hold the **POWER** button for 10 to 30 seconds until the meter turns off.

2 Wait for several seconds, then press the **POWER** button again.

The meter turns on.

Note: If the AIM does not turn on after a hard reset, connect the AIM to the AC power adapter (see "Battery Charging" on page 15), then press the **POWER** button. If the meter still does not turn on, return the AIM to Trilithic Customer Service. See "Return Policy" on page vi.

Power Management

Your AIM is powered by an 8-cell 9.6 V 3.8 AH NiMH battery pack. The battery supplies power to the meter, as well as to the LNB and SWiM during installation of an ODU. When fully charged, the AIM's battery provides sufficient power to install satellite receiver systems in approximately six single-family homes on a single charge.

The AIM has the following power-saving features that help to extend the battery charge:

- *If no buttons have been pressed on the AIM for **2 minutes***, the **backlight** on the display turns off. The backlight automatically turns back on when you press any button on the meter.
- *If no buttons on the AIM have been pressed for **10 minutes***, the meter enters a power-saving mode called **Standby**. The AIM automatically exits Standby mode when you press and hold the **POWER** button until the backlight turns on.
- *If no buttons on the AIM have been pressed for **30 minutes***, the meter automatically **turns off**. To turn the meter on, press and hold the **POWER** button until the backlight turns on.

You can customize the time periods for each of the power-saving features on the AIM (see "Setting Up the Meter" on page 23). However, extending the time period longer than the default setting shortens the time that the battery charge lasts.

Note: If you are using your AIM for the first time, you should fully charge the battery before use. See "Battery Charging" on page 15.

Note: You can quick press the **POWER** button to turn on and turn off the display backlight.

Battery Charging

You can charge the AIM's battery from a power outlet using the AC power adapter provided with the meter. You also can charge the AIM in your vehicle while the vehicle is running using the vehicle power adapter. The AIM can be charged while it is powered off or while it is powered on, which allows you to use the AIM while it is charging.

The battery icon in the top right of the AIM display indicates the power level of the battery. The AIM should be charged before the battery icon shows only one remaining bar of power. If the battery icon flashes and the meter begins to beep at 30 second intervals, the AIM should be charged immediately.

Caution: *When charging the meter battery, make sure that the ambient temperature is between 40°F (5°C) and 100°F (37°C) to prevent damage to the battery.*

You should fully charge the AIM's battery before you use it for the first time. To charge the battery:

1 Plug the AC power adapter into a power outlet, or plug the vehicle power adapter into a 12 VDC socket, such as a cigarette lighter socket.

2 Plug the other end of the power adapter into the AIM's power input connector.

The charging process begins. A plug icon appears at the top of the display and the bars in the battery icon sequentially flash to show that the meter is charging. (If the meter is off, a battery icon appears on the display.)

Caution: *Use only the AC power adapter or vehicle power adapter provided with the meter to charge the meter battery.*

3 When the charging process is complete, the display shows a filled battery icon.

Unplug the power adapter from the AIM's charging connector. Then unplug the other end from the power outlet or 12 VDC socket.

Note: It normally takes approximately 4 hours to fully charge the AIM if its battery is depleted.

Battery Replacement

If necessary, you can replace the AIM's battery. To obtain a new battery, contact Trilithic. See "Spare Parts List" on page 22.

You also can return your AIM to Trilithic Customer Service and request that the battery be replaced. See "Return Policy" on page vi.

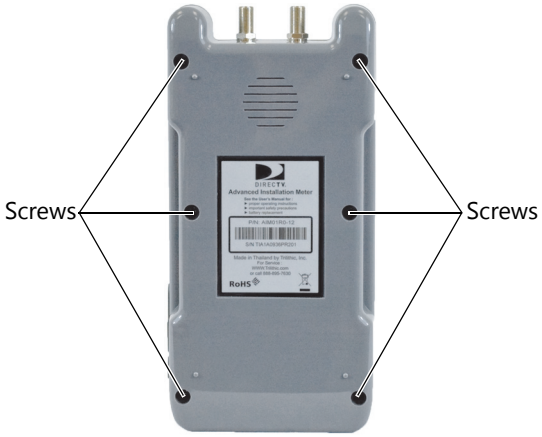
Caution: *ESD (electro-static discharge) can damage the meter. When removing and replacing the battery, observe proper ESD precautions to avoid static discharge. We recommend performing this procedure at a functional ESD workstation. Avoid touching the meter's circuit board during the procedure.*

Important: *Make sure the AIM is turned off and is not connected to a power source before you remove and replace the battery.*

To remove the battery:

1 Using a Phillips-head screwdriver, remove the 6 screws from the back housing of the AIM. See Figure 5.

Figure 5 Removing the Back Housing Screws



Tip: We recommend using a power Phillips screwdriver that can provide 6 to 9 in-lbs of torque.

Figure 6 Removing the Battery Cover

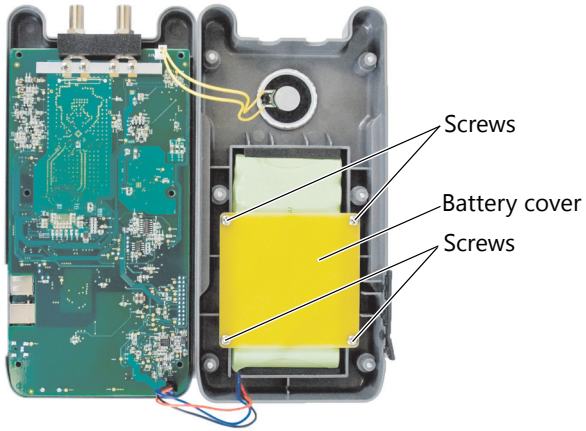
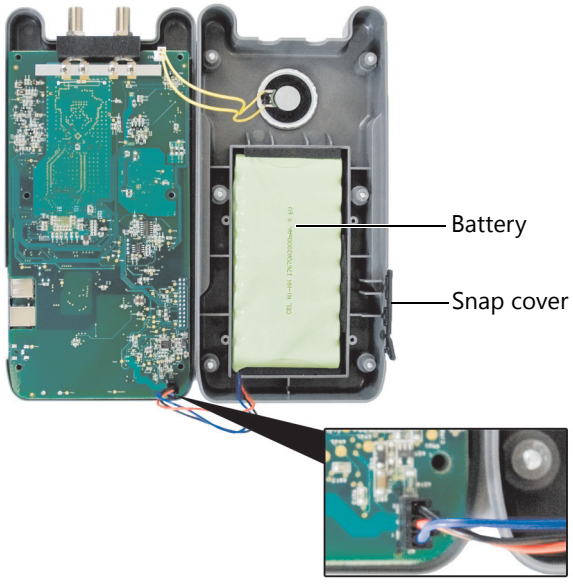


Figure 7 Removing the Battery



2 Carefully separate the front housing and the back housing, and place the unit on a flat work surface.

3 Using the Phillips-head screwdriver, remove the 4 screws on the battery cover and remove the cover. See Figure 6.

4 Disconnect the battery connector from the circuit board. See Figure 7.

5 Remove the battery from the back housing.

To replace the battery:

1. Place the new battery in the compartment in the AIM back housing with the battery wires routed as shown in Figure 7.
2. Reconnect the battery connector to the circuit board.
3. Replace the battery cover and 4 screws. Use the Phillips-head screwdriver to tighten the 4 screws. See Figure 6.
4. If the snap cover for the power input and USB connectors was dislodged during the process, replace it by inserting it in the slot as shown in Figure 7.
5. Place the back housing on top of the front housing. Make sure that the battery wires are tucked into the opening at the bottom of the back housing and are not pinched between the housings.
6. Use the Phillips-head screwdriver to reinstall the 6 screws securing the back housing to the front housing. See Figure 5.
7. To confirm that the battery has been installed correctly, press and hold the Power button to make sure that the AIM turns on.
8. Follow local guidelines for battery disposal.

Note: We recommend using a torque setting of 6 to 9 in-lbs to tighten the back housing screws in order to provide a seal that protects the electronics from environmental conditions.

Getting Technical Support

When you need instructions for using the AIM, your first resource for help is this manual. If you cannot find the information you need, you can:

- Go to the DIRECTV Satellite Installer website or other websites provided by DIRECTV. DIRECTV websites contain product specifications and information, tips, release information, marketing information, Frequently Asked Questions (FAQs), bulletins and other technical information. You can also check these websites for product updates.
- Contact Trilithic technical support. Technical support is available Monday through Friday from 8:00 am to 5:00 pm EST at 1-317-895-3600 or 1-800-344-2412 (toll free). You can also e-mail technical support at techsupport@trilithic.com.

  For a quicker support response when calling or sending e-mail, provide the following information:

  – your name and company name
  – the technical point of contact (name, phone number, e-mail)
  – the AIM serial number, firmware and hardware version numbers
  – a detailed description of the problem you are having, including any error or information messages

Safety Instructions

When operating and maintaining the AIM meter, basic safety precautions should always be followed to reduce the risk of electric shock and injury to persons, including the following:

- Thoroughly read this User's Manual before using the meter or attempting to replace the battery.
- **Warning!** The AIM meter is capable of generating 21 volts. Never connect the AIM to devices that may be damaged by application of AC or DC voltage.
- Do not disassemble the meter, unless you are replacing the battery. Disassembling the meter could produce an electric shock.
- Do not expose the meter to rain or moisture. Avoid using the meter in severe weather conditions.
- Use only the battery, AC power adapter, and vehicle power adapter provided by Trilithic. Using substitute batteries or power adapters voids the warranty and could produce an electrical shock.
- Never attempt to repair or refurbish the battery. Dispose of the battery properly.
- Refer to this User's Manual for instructions on making connections to the ODU and IRD F connectors.
- **Warning!** Use extreme caution when carrying or using the AIM while on a ladder, roof, or any other elevated work environment. Make sure that you are in a stable, secure, and safe position before using the AIM. Ensure that the AIM and shoulder strap do not get caught on the ladder or any other object while working in an elevated work environment. Do not hang the AIM shoulder strap around your neck in any circumstances. Consult approved DIRECTV safety training materials and all warnings and instructions provided by the ladder manufacturer for additional guidance on safe use of ladders, tools, and safety procedures. ***Failure to follow this warning could result in severe injury or death.***

Technical Specifications

Frequency Range	250 MHz to 2150 MHz
Signal Level Range	-10 dbm to -69 dbm
RF Input Connector	Replaceable F-Type (2)
Input Impedance	75 ohm
Measurements	Refer to the instructions in this manual.
LNB Power Supply	13 volts / 18 volts
SWiM Power Supply	21 volts
Communications	USB flash drive (Linux format only)
Battery	8-cell 9.6 Volt 3.8 AH Rechargeable NiMH
Operating Temperature	-25°F to 125°F (-29°C to 52°C)
Storage Temperature	-40°F to 150°F (-40°C to 65°C)
Battery Charging Temperature	40°F to 100°F (5°C to 37°C)
Display	240 × 160 pixel backlit LCD
Weight	2 lbs, 8.6 oz (1150 g)
Dimensions	9.6" × 4.6" × 2.3" (244.4 mm × 118 mm × 58.7 mm)

Spare Parts List

You can order the following parts for the AIM. Contact Trilithic at 888-895-7630 and request the corresponding part number below:

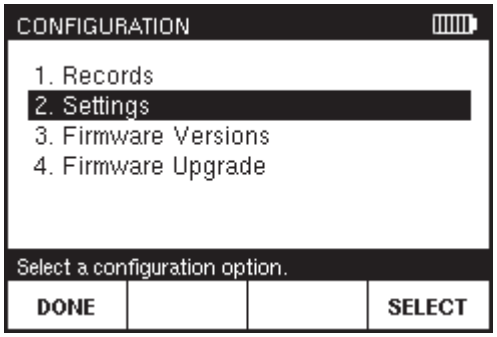
- 100 – 240 VAC power adapter: **0610177000**
- 12 VDC vehicle power adapter: **2072097000**
- Battery pack: **0090056000**
- 25 Ω Cable Test Load: **2011379000**
- F connector: **0200690000**
- Carrying case: **2131417000**
- 512 MB USB flash drive: **0930157000**
- Protective boot kit: **2131522000**

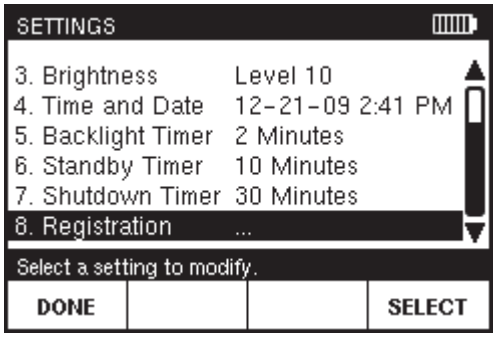
2 Setting Up the Meter

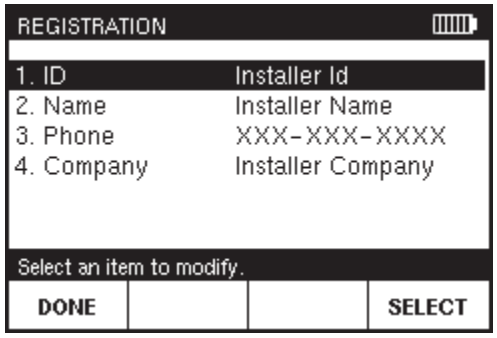
Before you use your AIM, you should enter registration information, including your ID, name, phone number, and company (see page 24). You also should review the meter's settings. You can change the following settings:

- volume (see page 26)
- display contrast and brightness (see page 27)
- time and date, including format (see page 28)
- time limits for automatically turning off the display backlight, entering Standby mode, and turning off the meter (see page 30).

Tip: To quickly adjust the setting for display contrast, display brightness, or volume, you can press **Fn** from any screen. On the **UTILITIES** window, use ▲ or ▼ to highlight the setting you want to change, then use ◄ or ► to select the new level. Press **Fn** to exit.







Entering Registration Information

Before you use your AIM, you should enter registration information in the meter, including your name, ID, phone number, and company.

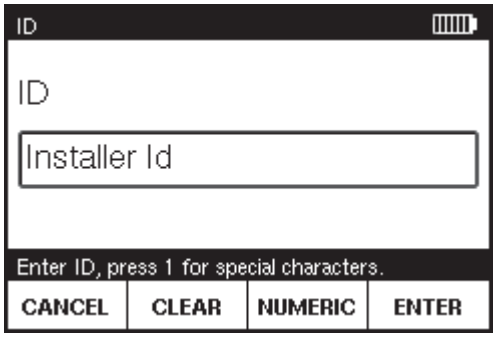
To enter registration information:

1 Press **CONFIG** to go to the **CONFIGURATION** screen.

2 Use ▲ or ▼ to highlight **Settings** and press **SELECT** to go to the **SETTINGS** screen.

3 Use ▲ or ▼ to highlight **Registration** and press **SELECT** to go to the **REGISTRATION** screen.

4 Use ▲ or ▼ to highlight the item you want to enter (**ID**, **Name**, **Phone**, or **Company**). Then press **SELECT** to go to the entry screen.



Note: To delete a character, press the **Back** button. You also can use ◄ or ► to navigate within your entry, or press **CLEAR** to delete the entry and start over. Press **CANCEL** to exit without saving changes.

Tip: To enter only numbers, press **NUMERIC**. To enter letters and numbers, press **ALPHA**. To enter capital letters, continue pressing the letter button until the capital letter appears.

Tip: To enter a space or a special character (such as -, #, &, or +), press the "1" button repeatedly until the space or character you want to enter appears.

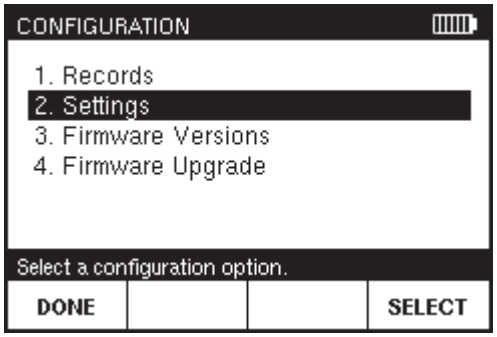
5 Use the alphanumeric keypad to enter the ID, name, phone number or company.

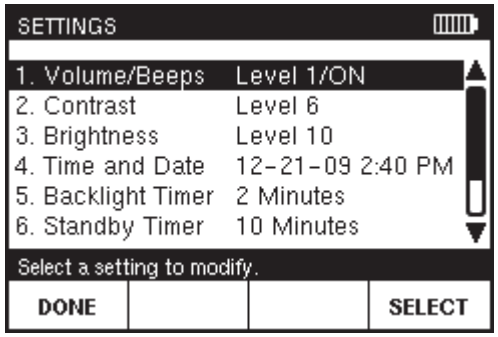
6 Press **ENTER** to save and return to the **REGISTRATION** screen.

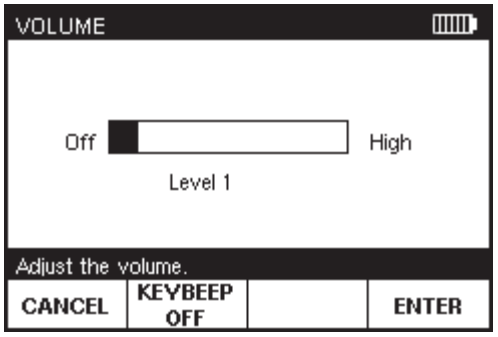
7 Repeat Step 4 through Step 6 for each item on the **REGISTRATION** screen.

8 When you have finished entering registration information, press **DONE** to return to the **SETTINGS** screen.

Tip: You can temporarily turn on or turn off the meter sound by pressing **MUTE**. You also can press **Fn** to quickly adjust the volume setting.







Changing Volume Setting

You can change the volume setting for your AIM.

To change the volume settings:

1 Press **CONFIG** to go to the **CONFIGURATION** screen.

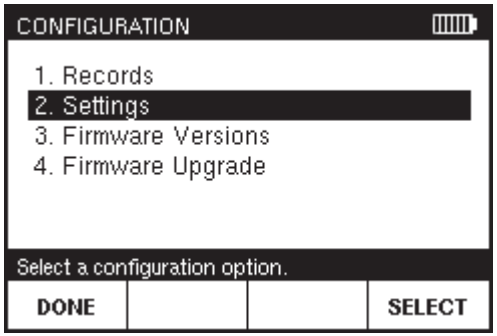
2 Use ▲ or ▼ to highlight **Settings** and press **SELECT** to go to the **SETTINGS** screen, which shows the current settings for the meter.

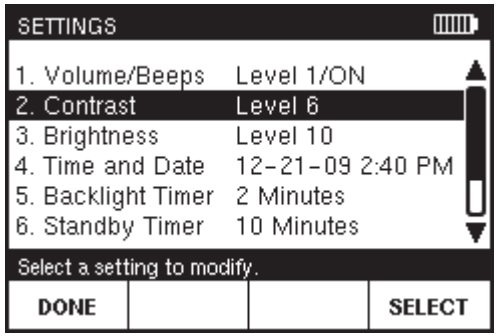
3 Use ▲ or ▼ to highlight **Volume** and press **SELECT** to go to the **VOLUME** screen.

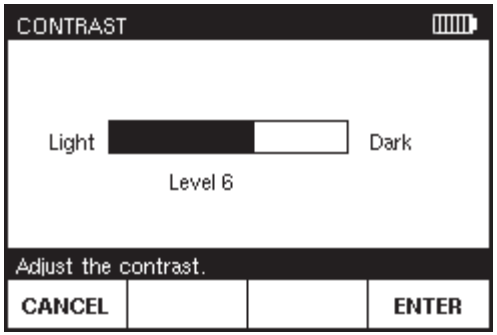
4 Use ◄ or ► to select the desired volume setting. To turn on or off the tone that sounds each time a key is pressed, press **KEYBEEP ON** / **OFF**.

5 Press **ENTER** to return to the **SETTINGS** screen.

Tip: You can press **Fn** to quickly adjust the display contrast or display brightness settings.







Changing the Display Contrast or Brightness

You can change the display contrast and display brightness settings for your AIM.

To change the display contrast or brightness:

1 Press **CONFIG** to go to the **CONFIGURATION** screen.

2 Use ▲ or ▼ to highlight **Settings** and press **SELECT** to go to the **SETTINGS** screen, which shows the current settings for the meter.

3 Use ▲ or ▼ to highlight **Contrast** or **Brightness** and press **SELECT** to go to the **CONTRAST** or **BRIGHTNESS** screen.

4 Use ◄ or ► to select the desired setting. Then press **ENTER** to return to the **SETTINGS** screen.

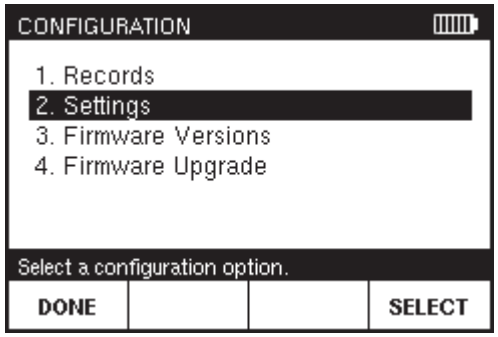
Changing Time and Date Settings

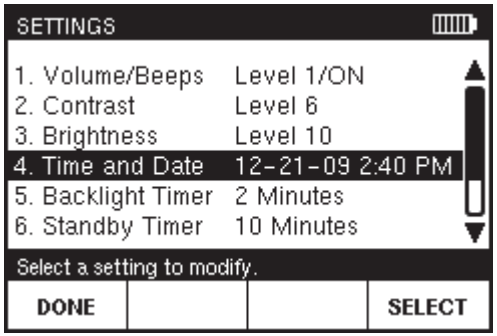
You can change the time and date settings of your AIM, including the format for the time and date.

To change the time and date settings:

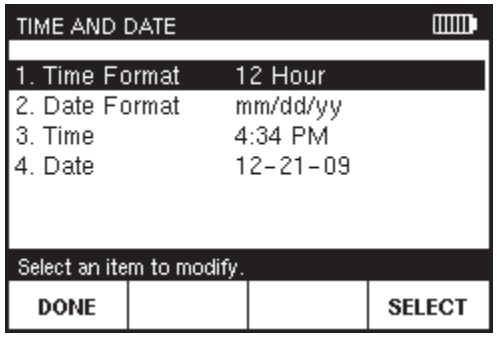
1 Press **CONFIG** to go to the **CONFIGURATION** screen.

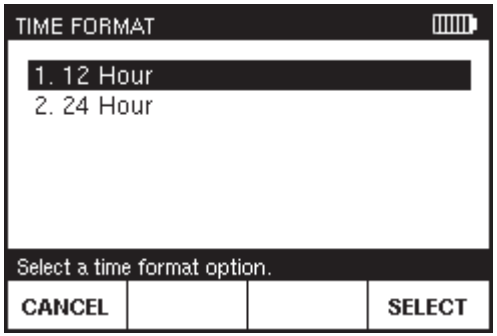
2 Use ▲ or ▼ to highlight **Settings** and press **SELECT** to go to the **SETTINGS** screen, which shows the current settings for the meter.





3 Use ▲ or ▼ to highlight **Time and Date** and press **SELECT** to go to the **TIME AND DATE** screen.





Note: When entering time or date, you can press the **Back** button to delete a character. You also can use ◄ or ► to navigate within your entry, or press **CLEAR** to delete the entry and start over. Press **CANCEL** to exit without saving changes.

Tip: When entering the time, press **AM** or **PM** as appropriate.

4 Use ▲ or ▼ to highlight the item you want to change (**Time Format**, **Date Format**, **Time**, or **Date**). Then press **SELECT** to go to the entry screen.

5 Use ▲ or ▼ to highlight the desired format setting, or use the numeric keypad to enter the time or date. Then press **SELECT** to return to the **TIME AND DATE** screen.

6 When you have finished changing time and date settings, press **DONE** to return to the **SETTINGS** screen.

Changing Automatic Timer Settings

You can change the automatic timer settings for your AIM, including:

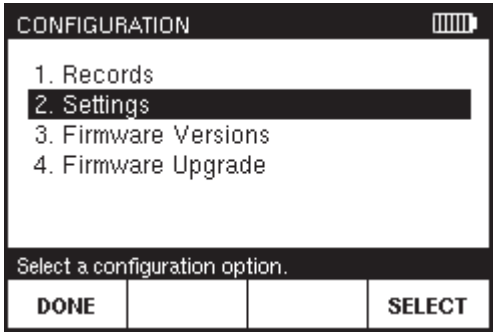
- **Backlight Timer:** If no buttons have been pressed on the AIM after the specified time limit, the backlight on the display turns off. The backlight automatically turns back on when you press any button on the meter.
- **Standby Timer:** If no buttons on the AIM have been pressed after the specified time limit, the meter automatically enters a power-saving mode called Standby. The AIM automatically exits Standby mode when you press and hold the **POWER** button until the backlight turns on.
- **Shutdown Timer:** If no buttons on the AIM have been pressed after the specified time limit, the meter automatically turns off. The meter can be turned back on by pressing and holding the **POWER** button until the backlight turns on.

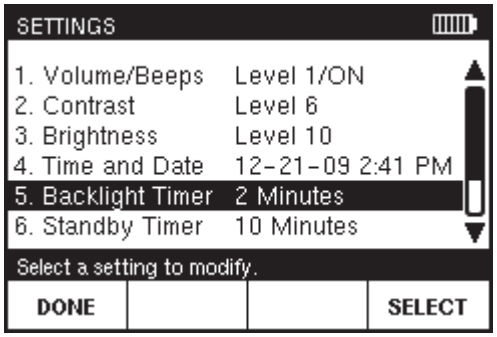
The AIM's automatic timer settings are designed to help extend the battery charge. You can customize the automatic timer settings. However, extending the time period longer than the default setting decreases the time that the battery charge lasts.

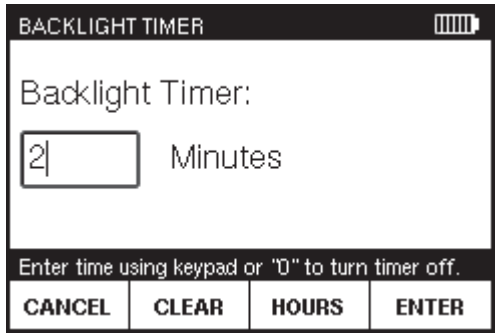
To change automatic timer settings:

1 Press **CONFIG** to go to the **CONFIGURATION** screen.

2 Use ▲ or ▼ to highlight **Settings** and press **SELECT** to go to the **SETTINGS** screen, which shows the current settings for the meter.







Tip: Press **HOURS**, **MINUTES**, or **SECONDS** to switch between time units. The maximum value is 4 hours.

Note: To delete a character, press the **Back** button. You also can use ◄ or ► to navigate within your entry, or press **CLEAR** to delete the entry and start over. Press **CANCEL** to exit without saving changes.

3 Use ▲ or ▼ to highlight the automatic timer setting you want to change:

- Highlight **Backlight Timer** to set the time limit for automatically turning off the display backlight after no buttons have been pressed.
- Highlight **Standby Timer** to set the time limit for automatically entering Standby mode after no buttons have been pressed.
- Highlight **Shutdown Timer** to set the timer for automatically turning off the meter after no buttons have been pressed.

4 Use the numeric keypad to enter a timer setting.

5 Press **NEXT** to return to the **SETTINGS** screen.

3 Setting Up a Job

Before you perform tasks for an installation using the AIM, you need to set up the information for the job. Setup tasks include:

- entering the **account number** (see page 33)
- entering **notes** (optional; see page 35)
- selecting the **ODU type** (see page 36)
- selecting the **switch type** (see page 37)
- entering the **zip code** (see page 38).

Starting a Job

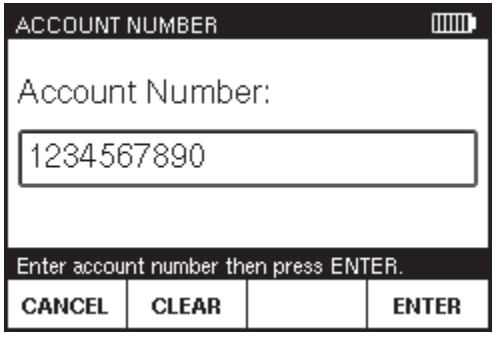
To start a job, enter the account number for the installation. The AIM stores information about the tasks you perform for the installation in records associated with the account number.

For the first job at an installation, you also set the ODU type, switch type, zip code, and notes either by accepting the default settings (based on the previous job), or by changing the default settings. See "Modifying the Setup for a Job" on page 35.

To start a job:

1 From the **HOME** screen, press **SETUP** to go to the **MODIFY JOB SETUP** screen.

2 Use ▲ or ▼ to highlight **Account #**. Then press **SELECT** to go to the **ACCOUNT NUMBER** screen.



3 Using the numeric keypad, enter the account number for the job. Then press **ENTER**.

Note: To delete a character, press **Back**. You also can use ◄ or ► to navigate within your entry, or press **CLEAR** to delete the entry and start over. Press **CANCEL** to exit without saving.

Tip: The account number can be up to 22 digits.

Note: The default settings are based on the values entered for the previous job.

The **MODIFY JOB SETUP** screen reappears, showing the account number you entered and the default settings for:

- ODU Type
- Notes
- Switch Type
- Zip Code

4 To change the default settings, see "Modifying the Setup for a Job" on page 35.

5 When you have completed the setup information for the job, press **DONE** on the **MODIFY JOB SETUP** screen to return to the **HOME** screen. To install an ODU without returning to the **HOME** screen, press **INSTALL**.

Modifying the Setup for a Job

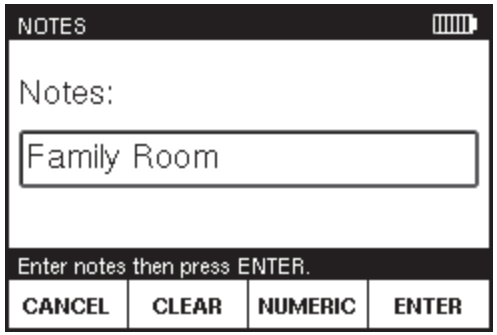
You can change the ODU type, switch type, and zip code settings for a new job or the current job from the **MODIFY JOB SETUP** screen. You also can add notes for the job to include key information about the job, such as the specific room of the installation.

To access the **MODIFY JOB SETUP** screen, press **SETUP** from the **HOME** screen.

Notes

To change the notes for a job:

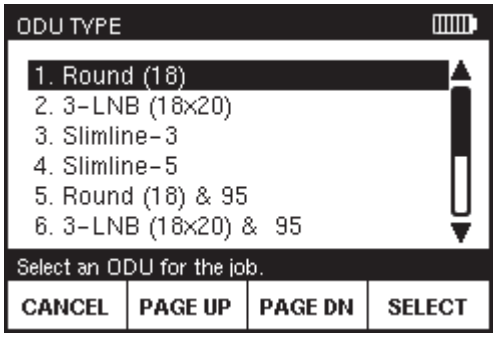
1. On the **MODIFY JOB SETUP** screen, use ▲ or ▼ to highlight **Notes** and press **SELECT** to go to the **NOTES** screen.
2. Using the keypad, enter the notes for the job.
3. Press **ENTER** to return to the **MODIFY JOB SETUP** screen.



Tip: To delete a character, press the **Back** button. You also can use ◄ or ► to navigate within your entry, or press **CLEAR** to delete the entry and start over. To exit without saving changes, press **CANCEL**.

Tip: To enter only numbers, press **NUMERIC**. To enter letters and numbers, press **ALPHA**. To enter capital letters, continue pressing the letter button until the capital letter appears.

Tip: To enter a space or a special character (such as -, #, &, or +), press the "1" button repeatedly until the space or character you want to enter appears.



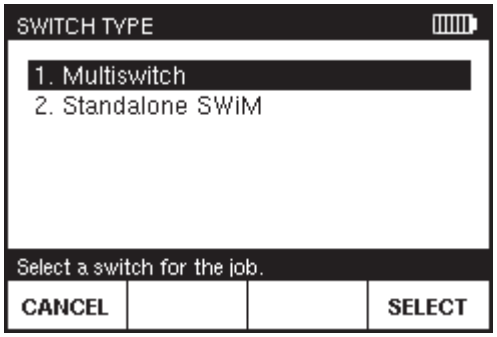
Tip: You also can press the number for an option to highlight it.

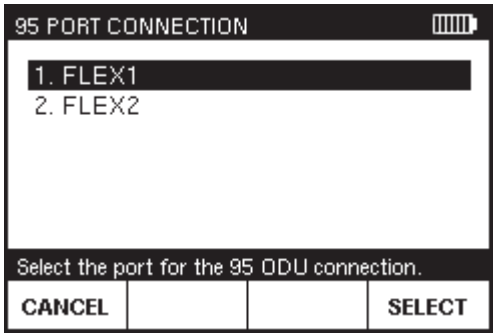
Tip: To scroll quickly through the ODU types, press **PAGE UP** or **PAGE DN**. To exit without saving changes, press **CANCEL**.

ODU Type

To change the ODU type for a job:

1. On the **MODIFY JOB SETUP** screen, use ▲ or ▼ to highlight **ODU Type** and press **SELECT** to go to the **ODU TYPE** screen.
2. Use ▲ or ▼ to highlight the ODU type for the job.
3. Press **SELECT** to return to the **MODIFY JOB SETUP** screen.



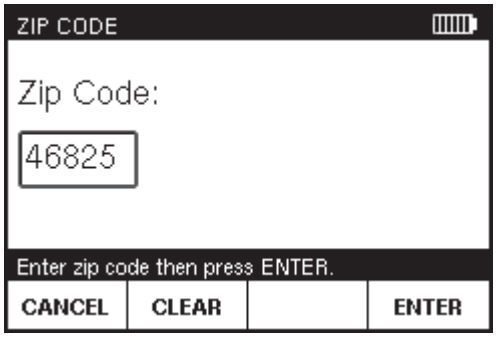


Tip: To exit without saving changes, press **CANCEL**.

Switch Type

To change the switch type for a job:

1. On the **MODIFY JOB SETUP** screen, use ▲ or ▼ to highlight **Switch Type** and press **SELECT** to go to the **SWITCH TYPE** screen.
2. Use ▲ or ▼ to highlight the type of switch for the job and press **SELECT**.
3. If the ODU configuration includes a 95° ODU and a multiswitch or SWiM, the **95 PORT CONNECTION** screen appears. Use ▲ or ▼ to highlight the port to which the 95° ODU is connected.
4. Press **SELECT** to return to the **MODIFY JOB SETUP** screen.



Tip: To delete a character, press the **Back** button. You also can use ◄ or ► to navigate within your entry, or press **CLEAR** to delete the entry and start over. To exit without saving changes, press **CANCEL**.

Zip Code

To change the zip code for a job:

1 On the **MODIFY JOB SETUP** screen, use ▲ or ▼ to highlight **Zip Code** and press **SELECT** to go to the **ZIP CODE** screen.

2 Using the numeric keypad, enter the zip code for the job. Then press **ENTER** to return to the **MODIFY JOB SETUP** screen.

4 Installing an ODU

The AIM guides you through the steps for aligning and performing follow-up Extended Installation Verification (EIV) for each ODU.

Aligning the ODU

The tasks for aligning an ODU vary depending on the type of ODU. All ODU types require coarse adjustments to be made in the azimuth and elevation directions. The 95° ODU also requires an adjustment in the tilt direction. To make coarse adjustments, move the ODU in the appropriate direction and use the AIM to determine the position that obtains the maximum possible signal power.

Slimline ODUs require fine adjustments (dithering) to be performed in the azimuth and elevation directions to further hone the signal power. To dither, rotate the fine adjustment jack screws to:

- obtain a "reference" signal power on one side of the beam peak
- obtain the identical strength on the other side of the beam peak
- split the difference between the two reference points to obtain the maximum signal power for all applicable orbital slots.

The AIM guides you through the dithering process using a series of audible tones to notify you when the reference values have been obtained.

Important: *The DIRECTV training materials are the primary source of ODU installation instruction. Those documents supersede the instructions in this manual.*

Tip: If you encounter an issue during the installation process and want to save information for reference later, you can capture an image of the AIM screen and save it as a record. See "Capturing a Screenshot" on page 11.

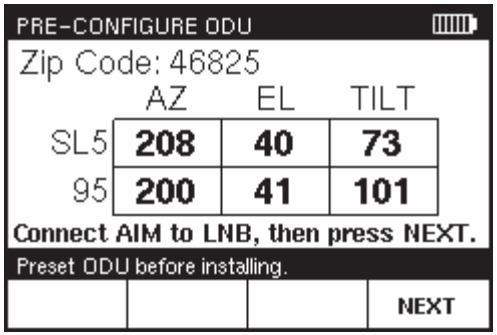
The table below indicates which tasks need to be performed for each ODU. When an installation includes two ODUs, you must perform the installation tasks for each ODU. The AIM Install feature guides you through the tasks based on the selected ODU.

When using the AIM to align an ODU, refer to the appropriate sections for assistance:

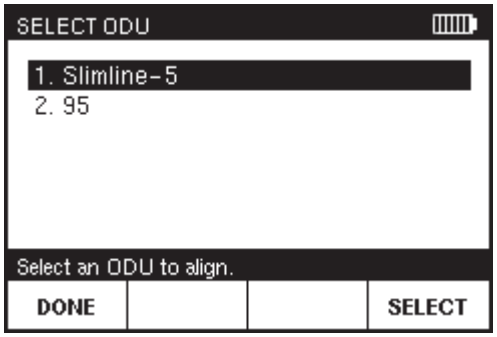
- "Task A. Installation Setup" on page 41
- "Task B. Coarse Azimuth Adjustment" on page 42
- "Task C. Coarse Elevation Adjustment" on page 42
- "Task D. Tilt Adjustment (95°, 3-LNB, Slimline-5, and Slimline-5S (SWiM) ODUs Only)" on page 43
- "Task E. Fine Elevation Adjustment (Slimline ODUs Only)" on page 43
- "Task F. Fine Azimuth Adjustment (Slimline ODUs Only)" on page 45

ODU Installation Tasks

ODU	Supported Orbital Slots	Setup	Coarse Azimuth Adjustment	Coarse Elevation Adjustment	Tilt Adjustment	Fine Elevation Adjustment (Dither)	Fine Azimuth Adjustment (Dither)
3-LNB (18" x 20")	101, 110, 119	✓	✓	✓	✓		
95°	95	✓	✓	✓	✓		
Round (18")	101	✓	✓	✓			
Slimline-3	99, 101, 103	✓	✓	✓		✓	✓
Slimline-5	99, 101, 103, 110, 119	✓	✓	✓	✓	✓	✓
Slimline-3S (SWiM)	99, 101, 103	✓	✓	✓		✓	✓
Slimline-5S (SWiM)	99, 101, 103, 110, 119	✓	✓	✓	✓	✓	✓
World Direct	95, 101	✓	✓	✓	✓		



Note: The default coordinates for the job are based on the ODU type and zip code selected for the job.



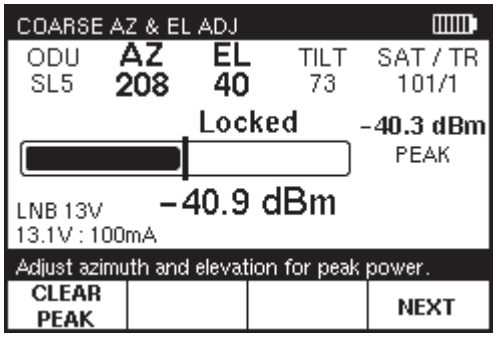
Task A. Installation Setup

To perform the installation setup:

1. Start the job for the installation ("Starting a Job" on page 33).
2. From the **HOME** screen, press **INSTALL**.

   The **PRE-CONFIGURE ODU** screen appears showing the default azimuth and elevation coordinates for the job. If appropriate, the default tilt coordinate also appears.
3. Perform the ODU site survey. Using the AIM azimuth and elevation coordinates, confirm that the selected location has a clear line-of-sight to the supported orbital slots (see "ODU Installation Tasks" on page 40).
4. Install the ODU according to the DIRECTV procedure.
5. Connect the AIM's ODU F Connector to the ODU's LNB output.
6. Press **NEXT** on the **PRE CONFIGURE ODU** screen.

   If the installation includes two ODUs, the **SELECT ODU** screen appears. Use ▲ or ▼ to highlight the ODU to align and press **SELECT** to continue.



Note: "Lock" appears on the screen when the signal power is above the minimum level required to supply the IRD.

Note: The PEAK measurement is the maximum signal power achieved thus far during the installation process. To clear the peak, press **CLEAR PEAK**.

Task B. Coarse Azimuth Adjustment

To perform the coarse azimuth adjustment:

1 While monitoring the signal power bar on the **COARSE AZ & EL ADJ** screen, rotate the ODU on the mast in the azimuth direction until the maximum signal power is reached.

2 Lock down the mounting bracket collar on the mast.

Task C. Coarse Elevation Adjustment

To perform the coarse elevation adjustment:

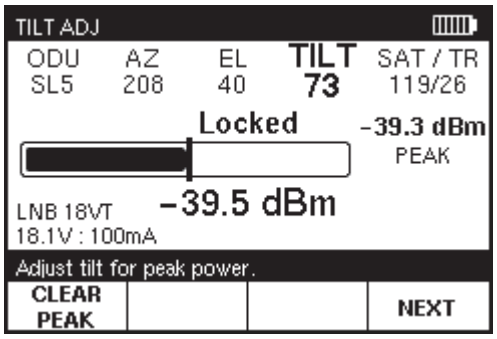
1 Loosen the ODU's elevation lock-down screws.

2 While monitoring the signal power bar on the **COARSE AZ & EL ADJ** screen, rotate the ODU in the elevation direction until the AIM indicates that it is "locked" onto the signal and the maximum signal power is reached.

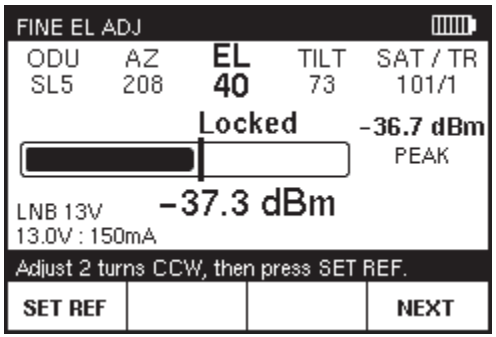
Important: *You might need to alternate between performing the coarse elevation adjustment and the coarse azimuth adjustment to achieve the maximum signal power.*

3 Tighten the elevation lock-down screws.

4 Press **NEXT** to continue.



Note: SNR ("signal-to-noise" ratio) is a measure of the received signal strength relative to the strength of the received noise, which is an indication of the quality of the signal.



Note: It will take around four turns to reach the reference value.

Task D. Tilt Adjustment (95°, 3-LNB, Slimline-5, and Slimline-5S (SWiM) ODUs Only)

To perform the tilt adjustment:

1. Loosen the ODU's tilt lock-down screws.
2. While monitoring the SNR bar on the **TILT ADJ** screen, slowly rotate the ODU around the tilt axis until the maximum SNR value is reached.
3. Tighten the tilt lock-down screws.
4. Press **NEXT** to continue.

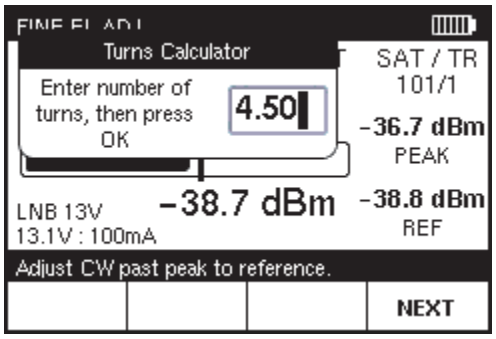
   For 3-LNB ODUs only, the **VERIFY AZ & EL** screen appears following the tilt adjustment to ensure the azimuth and elevation are still properly aligned. Adjust the coarse azimuth and elevation if necessary following the steps in "Task B. Coarse Azimuth Adjustment" on page 42 and "Task C. Coarse Elevation Adjustment" on page 42.

Task E. Fine Elevation Adjustment (Slimline ODUs Only)

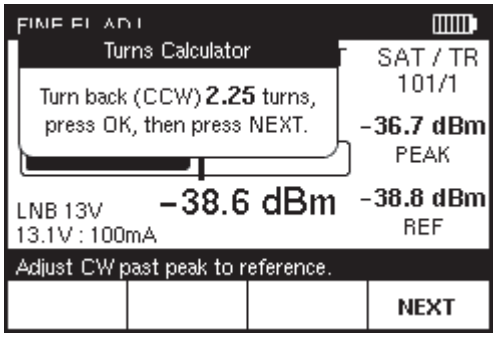
To perform the fine elevation adjustment:

1. Loosen the ODU's elevation lock-down screws.
2. Turn the ODU's elevation jack screw counterclockwise 2 turns.
3. On the **FINE EL ADJ** screen, press **SET REF** to set the reference value.

   The AIM sounds a confirmation tone and displays the reference value.
4. Zero out the readout dial on the elevation jack screw.
5. Turn the elevation jack screw clockwise until the meter begins to sound a series of beeps, indicating that the reference value is within 1 dB. Continue turning until the meter sounds a confirmation tone and the displayed signal power matches the reference value.



Example: If it took four and a half turns to return to the reference value, enter **4.50**.



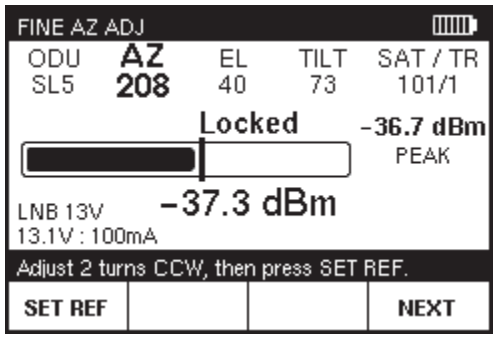
6 Refer to the ODU's dial and use the AIM's numeric keypad to enter the number of turns it took to return to the reference value. Then press **OK**.

7 Zero out the readout dial on the elevation jack screw.

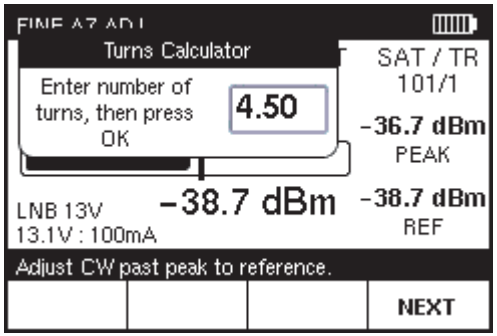
8 Refer to the AIM screen and turn the elevation jack screw counterclockwise the number of turns indicated on the AIM screen.

9 Tighten the elevation lock-down screws.

10 Press **OK** and then **NEXT** to continue.



Note: It will take around four turns to reach the reference value.



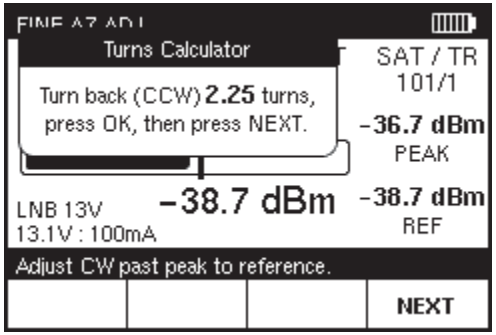
Example: If it took four and a half turns to return to the reference value, enter **4.50**.

Task F. Fine Azimuth Adjustment (Slimline ODUs Only)

To perform the fine azimuth adjustment:

1. Loosen the ODU's azimuth lock-down screws.
2. Turn the ODU's azimuth jack screw counterclockwise 2 turns.
3. On the **FINE AZ ADJ** screen, press **SET REF** to set the reference value.

   The AIM sounds a confirmation tone and displays the reference value.
4. Zero out the readout dial on the azimuth jack screw.
5. Turn the azimuth jack screw clockwise until the meter begins to sound a series of beeps, indicating that the reference value is within 1 dB. Continue turning until the meter sounds a confirmation tone and the displayed signal power matches the reference value.
6. Refer to the ODU's dial and use the AIM's numeric keypad to enter the number of turns it took to return to the reference value. Then press **OK**.
7. Zero out the readout dial on the azimuth jack screw.



8 Refer to the AIM screen and turn the azimuth jack screw counterclockwise the number of turns indicated on the AIM screen.

9 Tighten the azimuth lock-down screws.

10 Press **OK** and then **NEXT** to continue.

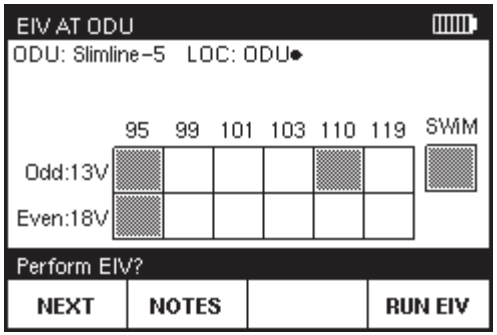
Performing EIV Following ODU Installation

When you complete the alignment process for the ODU, the **EIV AT ODU** screen appears. You can:

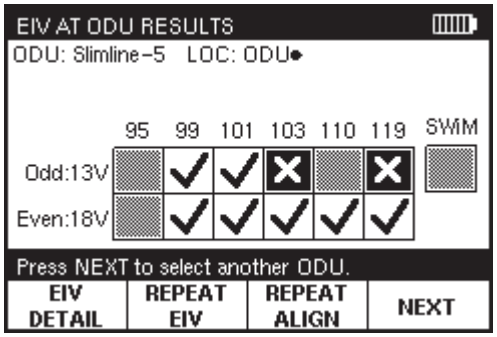
- immediately perform Extended Installation Verification (EIV) on the ODU that you just aligned. Follow the steps below.
- *if the installation includes two ODUs*, you can press **NEXT** to return to the **SELECT ODU** screen and align the other ODU.
- press **DONE** to return to the **HOME** screen and perform EIV later. For instructions, see "Performing EIV" on page 49.

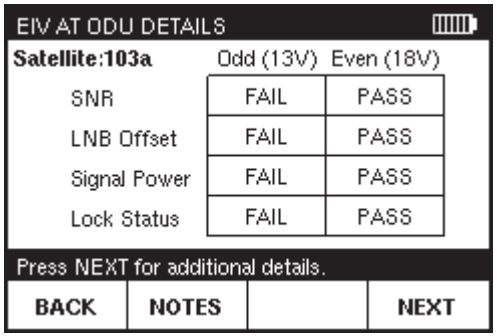
To perform the Extended Installation Verification (EIV) for the ODU that you just aligned:

1 On the **EIV AT ODU** screen, press **RUN EIV** and wait briefly for the results.



Note: To add a note about the EIV, such as details about where the EIV is being performed, press **NOTES**. Then enter the note following the instructions on page 35.





Note: On the **EIV AT ODU DETAILS** screen, you can press **NEXT** to view the details for another orbital slot, or press **BACK** to scroll back through the details to the **EIV AT ODU RESULTS** screen.

You also can press **NOTES** to add a note about the EIV, following the instructions on page 35.

2 On the **EIV AT ODU RESULTS** screen, review the results for all supported orbital slots and SWiM channels (if applicable). A satisfactory result is indicated by ✓. A problem is indicated by **X**.

If ✓ appears for all supported orbital slots, the ODU alignment is acceptable.

*If **X** appears for an orbital slot*, perform the following steps:

a Press **REPEAT EIV** to confirm the problem.

b If **X** appears again for one or more orbital slots, you can press **EIV DETAIL** to determine which tests failed. Troubleshoot any failures following the instructions provided by DIRECTV.

c To repeat the alignment process, press **REPEAT ALIGN**.

3 When you have finished reviewing EIV results on the **EIV AT ODU RESULTS** screen, you can press **DONE** to return to the **HOME** screen.

If the installation includes two ODUs, you can press **NEXT** to return to the **SELECT ODU** screen and align the other ODU.

5 Performing EIV

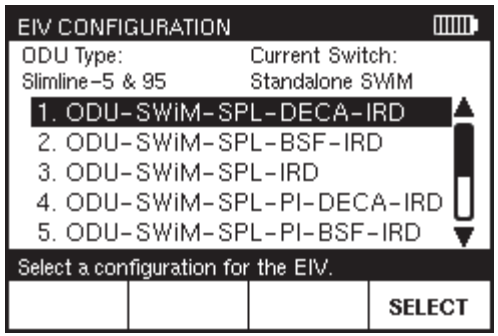
Extended Installation Verification (EIV) can be performed at any point in the installation to quickly confirm that the installation is satisfactory for all supported orbital slots. EIV is an easy way to pinpoint any potential problems with the installation. The AIM guides you through the steps for the testing.

To perform the Extended Installation Verification (EIV):

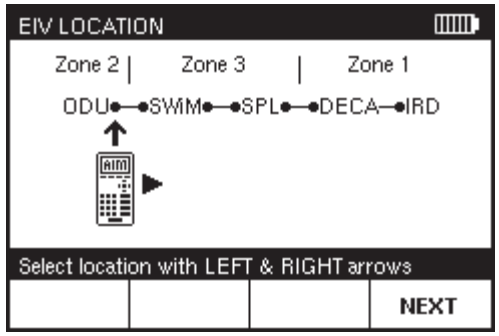
1 Start the job for the installation ("Starting a Job" on page 33).

2 From the **HOME** screen, press **EIV** to go to the **EIV CONFIGURATION** screen.

3 Use ▲ or ▼ to highlight the equipment configuration for the installation and press **SELECT** to go to the **EIV LOCATION** screen.

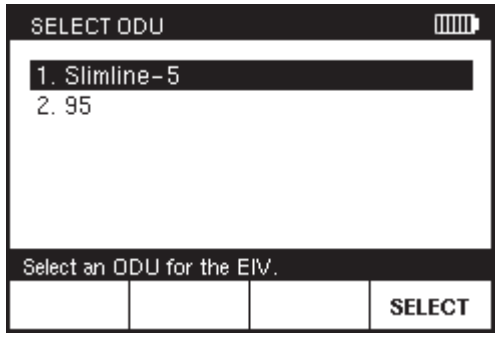


4 Use ◄ or ► to position the image of the AIM under the location where you are testing.

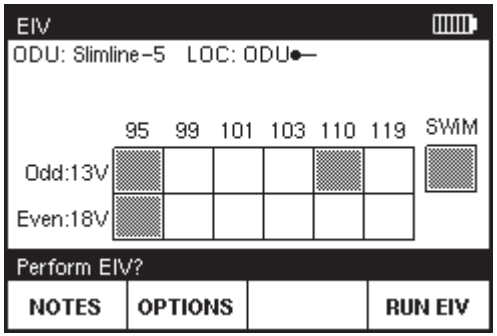


5 Connect the AIM ODU F connector at the location in the distribution network where you want to test. Then press **NEXT** to go to the **EIV** screen.

Example: To test between the ODU and the multiswitch, disconnect the cable connecting the ODU to the multiswitch and connect it to the AIM's ODU F connector.

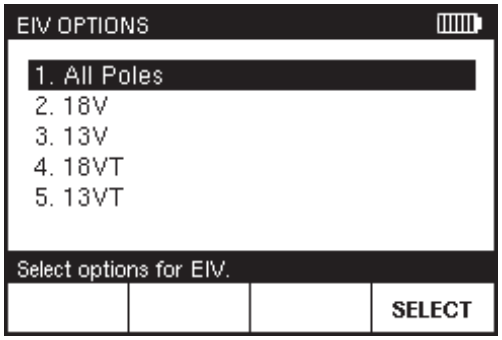


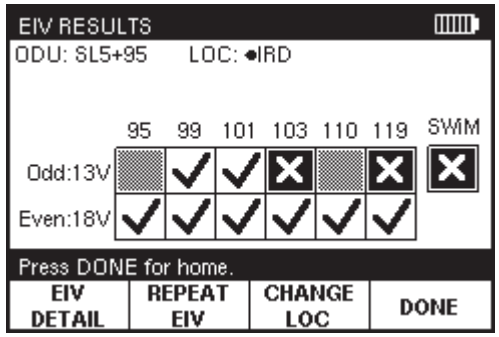
If the installation includes two ODUs, the **SELECT ODU** screen appears. Use ▲ or ▼ to highlight the ODU for which you want to perform EIV and press **SELECT** to go to the **EIV** screen.



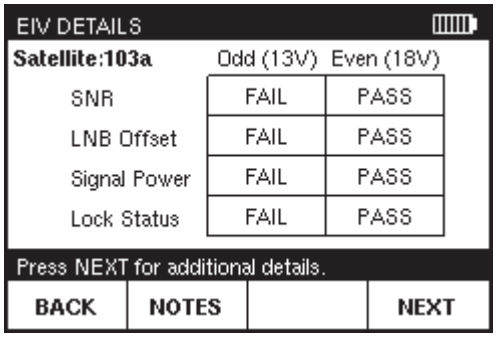
6 On the **EIV** screen, you can do one of the following:

- *To select an individual polarity for the EIV,* press **OPTIONS**. On the **EIV OPTIONS** screen, use ▲ or ▼ to highlight the polarity for the EIV. Then press **SELECT** to continue.
- *To add a note about the EIV,* such as details about where the EIV is being performed, press **NOTES**. Then enter the note following the instructions on page 35.
- *To run the test,* press **RUN EIV** and wait briefly for the results.





Note: To change the location where you are testing, press **CHANGE LOC**.



Note: On the **EIV DETAILS** screen, you can press **NEXT** to view the details for another orbital slot, or press **BACK** to scroll back through the details to the **EIV RESULTS** screen.

You also can press **NOTES** to add a note about the EIV, following the instructions on page 35.

7 On the **EIV RESULTS** screen, review the results for all supported orbital slots and SWiM channels (if applicable). A satisfactory result is indicated by ✓. A problem is indicated by **X**. An inconclusive result is indicated by **–**.

If ✓ appears for all supported orbital slots, the ODU alignment is acceptable.

*If **X** appears for an orbital slot*, perform the following steps:

a Press **REPEAT EIV** to confirm the problem.

b If **X** appears again for one or more orbital slots, you can press **EIV DETAIL** to determine which tests failed. Troubleshoot any failures following the instructions provided by DIRECTV.

8 When you have finished reviewing EIV results on the **EIV RESULTS** screen, you can press **DONE** to return to the **HOME** screen.

You also can press **CHANGE LOC** to perform EIV for another location.

6 Performing Other Network Tests

If there is a problem with a DIRECTV installation, you can run network tests to help you troubleshoot the problem. These tests include:

- **Guided Mode** (see page 53)
- **EIV Plus** (see page 58)
- **Satellite Tune** test (see page 63)
- **Transponder Survey** (see page 67)
- **Cable Resistance** test (see page 71)
- **In-Line** test (see page 73)
- **SWiM LF Power** test (see page 75)
- **SWiM Channel Assignments** test (see page 77)

The AIM guides you through the steps for each test.

Tip: If you encounter an issue while performing a test and want to save information for reference later, you can capture an image of the AIM screen and save it as a record. See "Capturing a Screenshot" on page 11.

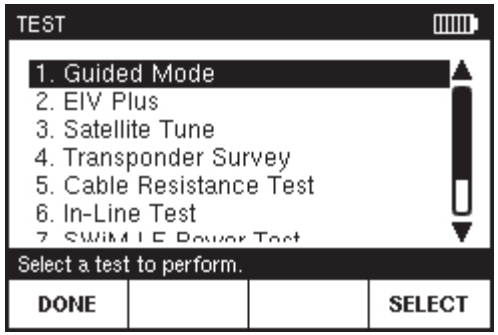
Using Guided Mode

Guided Mode is an optimized troubleshooting process that lets you quickly and easily identify equipment failures in an installation. The AIM guides you through a series of tests to pinpoint the source of the failures. After each test, the AIM identifies the faulty component or recommends the next location for testing to isolate the issue. It also saves the results of the test for later review (see page 81). Guided Mode makes troubleshooting easy by using the AIM's built-in intelligence to recommend the next step.

Guided Mode leads you through a series of tests (called EIV Plus) at various locations in the distribution network. EIV Plus can also be used as an independent troubleshooting tool. For more information on EIV Plus, see page 58.

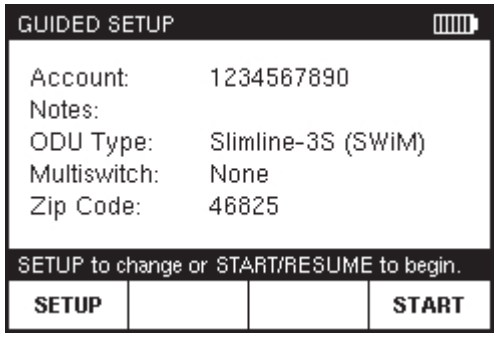
If a Guided Mode test fails and the failure could be due to inclement weather, you can use the Rain Mode feature to continue troubleshooting in Guided Mode. Rain Mode allows for a slight degradation in the RF signal in order to account for environmental conditions, allowing you to continue troubleshooting beyond the ODU. If a Guided Mode test was run using Rain Mode, the Rain Mode icon ( ) appears on the Results screen. While Rain Mode accounts for environmental factors, it does not increase the chance of passing Installation Verification (IV) at the IRD.

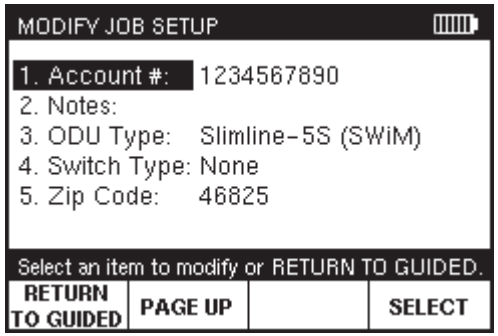
Note: Rain Mode can only be enabled in Guided Mode after the ODU has been repointed as part of troubleshooting; it remains disabled at all other times while in Guided Mode. The Unlock icon ( ) on the Function menu indicates that Rain Mode can be enabled. When the Lock icon ( ) is shown, Rain Mode cannot be enabled.

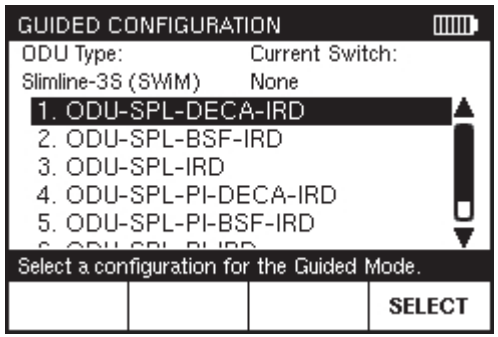


To troubleshoot an installation using Guided Mode:

1. Start the job for the installation ("Starting a Job" on page 33).
2. From the **HOME** screen, press **TEST** to go to the **TEST** screen.
3. Use ▲ or ▼ to highlight **GUIDED MODE** and press **SELECT** to go to the **GUIDED SETUP** screen.



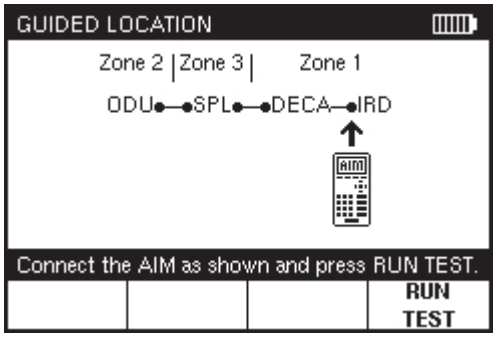


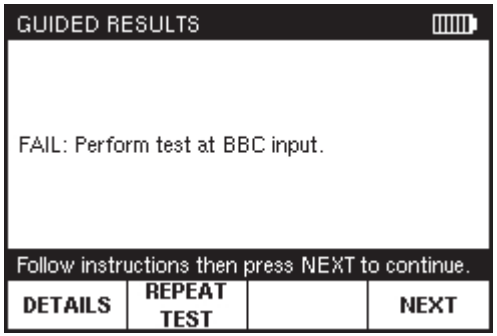


4 Verify the setup information for the job. Then press **START** to go to the **GUIDED CONFIGURATION** screen.

If the setup information is incorrect, press **SETUP** to go to the **MODIFY JOB SETUP** screen. Follow the instructions on page 35 to modify the setup information. Then press **RETURN TO GUIDED** to return to the **GUIDED SETUP** screen.

5 Use ▲ or ▼ to highlight the equipment configuration for the installation and press **SELECT** to go to the **GUIDED LOCATION** screen.



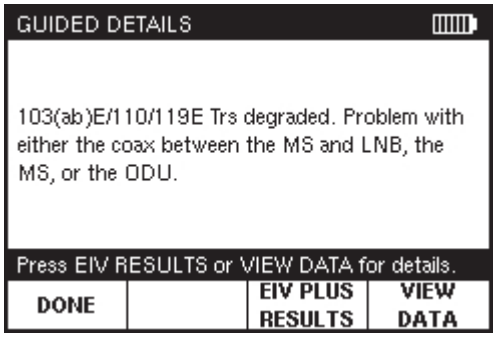


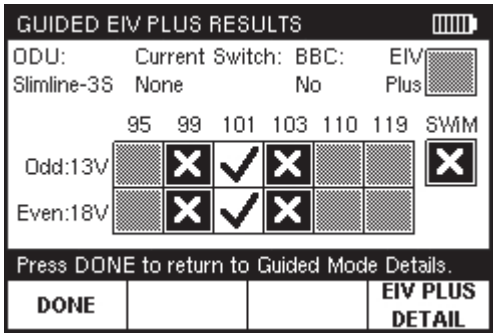
Note: If it is raining and an attempt to realign the ODU fails, you can enable Rain Mode to account for environmental conditions and continue troubleshooting. Press **Fn** and then **4** to enable **Rain Mode**. Press **Repeat Test** and wait for the results of the test. The Rain Mode icon ( ) appears on the Results screen to indicate the test was run in Rain Mode. If the test fails again, the failure may be due to signal degradation from the rain, or there may an issue with the LNB.

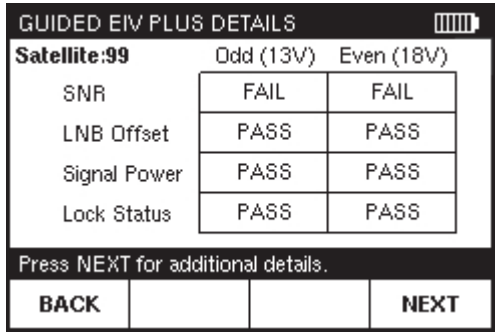
6 Connect the AIM ODU F connector at the location in the distribution network indicated on the display. Then press **RUN TEST** and wait for the results.

7 On the **GUIDED RESULTS** screen, review the results of the EIV Plus. Then do one of the following:

- *To view detailed results*, press **DETAILS** to go to the **GUIDED DETAILS** screen. Go to Step 8.
- *To repeat EIV Plus at the same location*, press **REPEAT TEST** and wait for the results of the test.
- *If results indicate a problem with the ODU alignment*, press **REPOINT** to go to the **PRE CONFIGURE ODU** screen. Then follow the instructions on page 41 to align the ODU.
- *To continue troubleshooting,* press **NEXT** to go to the **GUIDED LOCATION** screen and perform EIV Plus at a new location. Repeat Step 6.
- *When all problems have been addressed and troubleshooting is complete*, you can press **DONE** to return to the **TEST** screen.


GUIDED DETAILS
103(ab)E/110/119E Trs degraded. Problem with either the coax between the MS and LNB, the MS, or the ODU.
Press EIV RESULTS or VIEW DATA for details.
DONE
EIV PLUS RESULTS
VIEW DATA



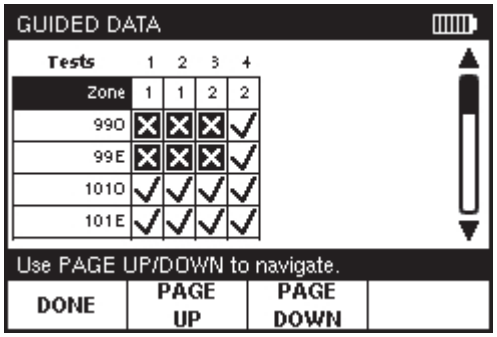


8 On the **GUIDED DETAILS** screen, review the possible problems with the installation. Then do one of the following:

- *To view results of the EIV Plus*, press **EIV PLUS RESULTS** to go to the **GUIDED EIV PLUS RESULTS** screen. Go to Step 9.
- *To view cumulative results for all EIV Plus tests* performed in Guided Mode for the installation, press **VIEW DATA** to go to the **GUIDED DATA** screen. Go to Step 10.
- *To continue troubleshooting*, press **DONE** to go back to the **GUIDED RESULTS** screen. Go back to Step 7.

9 On the **GUIDED EIV PLUS RESULTS** screen, review the results for all supported orbital slots and SWiM channels (if applicable). A satisfactory result is indicated by ✓. A problem is indicated by **X**. An inconclusive result is indicated by **–**.

- *If **X** appears for one or more orbital slots*, you can press **EIV PLUS DETAIL** to determine which tests failed. Then press **NEXT** to view the details for another orbital slot, or press **BACK** to scroll back through the details to the **GUIDED EIV PLUS RESULTS** screen.
- When you have finished reviewing EIV Plus results on the **GUIDED EIV PLUS RESULTS** screen, you can press **DONE** to return to the **GUIDED DETAILS** screen.



10 On the **GUIDED DATA** screen, review the results for each EIV Plus performed in Guided Mode for the installation. Results for each EIV Plus are listed in sequential columns; a satisfactory result is indicated by ✓ and a problem is indicated by **X**.

– Press **PAGE UP** or **PAGE DOWN** to navigate through the results.

– When you have finished reviewing results on the **GUIDED DATA** screen, you can press **DONE** to return to the **GUIDED DETAILS** screen.

Performing EIV Plus

You can use EIV Plus to perform a series of tests to help you quickly identify potential problems with an installation. EIV Plus performs the same tests as in Guided Mode, but requires you to interpret the results and determine the next steps for troubleshooting (instead of providing a recommendation).

EIV Plus and Guided Mode include one or more of the following tests, depending on the configuration:

- **B-Band Transponder test:** *For Slimline-3 and Slimline-5 ODUs*, verifies proper operation at low-frequencies (250 to 750 MHz).
- **A-Band Transponder test:** *For Slimline-3 and Slimline-5 ODUs*, verifies proper operation at high frequencies (1650 to 2150 MHz).
- **LNB Verification test:** *For all Slimline ODUs*, verifies that the installed equipment matches the configuration entered in the AIM.
- **22 kHz Tone Control test:** *For all ODUs except SWiM ODUs and Round (18")*, verifies the tone control of the multiswitch and the LNB.
- **18-Volt test:** *For all ODUs except SWiM ODUs*, verifies the voltage control of the multiswitch and the LNB.
- **BBC Switched Mode test:** *For configurations with BBCs*, verifies the K_u band passes through the BBC in switched mode.
- **SL3 101 Transponders on Tone Ports test:** *For Slimline-3 ODUs*, verifies the 101 transponders using 13-Volt and 18-Volt tones.
- **SWiM Channel Assignments test:** *For SWiM ODUs and SWiM multiswitches*, verifies the Receiver IDs (RIDs) and SWiM channel assignments for each IRD.

If an EIV Plus test fails and the failure could be due to inclement weather, you can use the Rain Mode feature to continue troubleshooting with EIV Plus. Rain Mode allows for a slight degradation in the RF signal in order to account for environmental conditions, allowing you to continue troubleshooting beyond the ODU. If an EIV Plus test was run using Rain Mode, the Rain Mode icon ( ) appears on the Results screen. While Rain Mode accounts for environmental factors, it does not increase the chance of passing Installation Verification (IV) at the IRD.

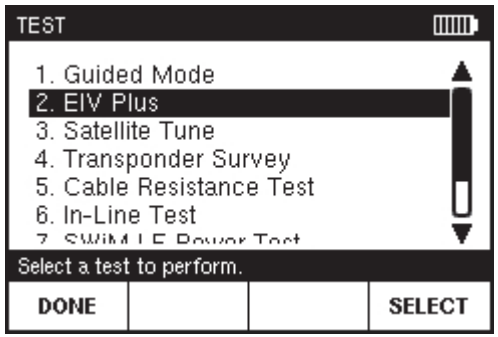
For easy troubleshooting, you can use Guided Mode to let the AIM's built-in intelligence guide you through a series of EIV Plus tests at recommended locations to identify an issue (see page 53). Or, you can perform EIV Plus at any location in the distribution network for an installation, following the steps below.

To perform EIV Plus:

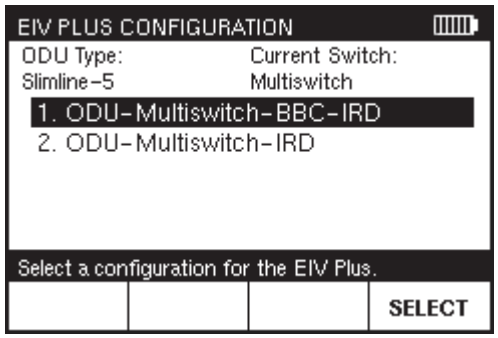
1 Start the job for the installation ("Starting a Job" on page 33).

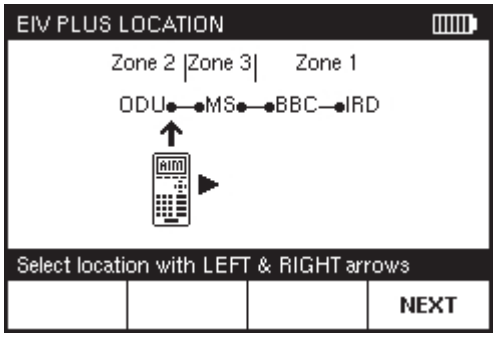
2 From the **HOME** screen, press **TEST** to go to the **TEST** screen.

3 Use ▲ or ▼ to highlight **EIV Plus** and press **SELECT** to go to the **EIV PLUS CONFIGURATION** screen.

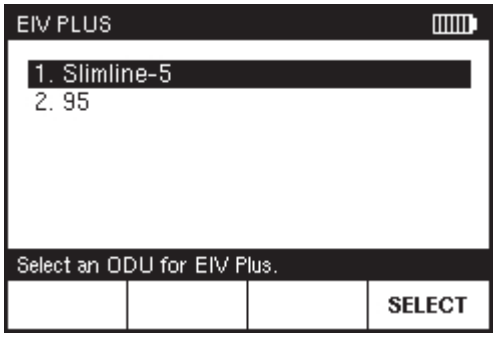


4 Use ▲ or ▼ to highlight the equipment configuration for the installation and press **SELECT** to go to the **EIV PLUS LOCATION** screen.





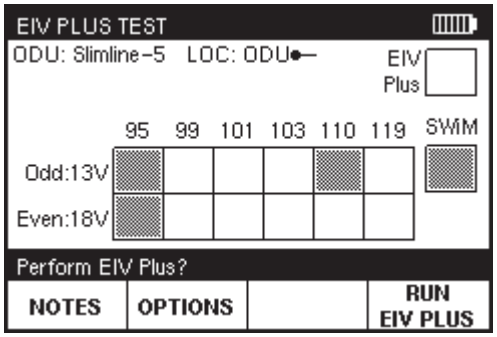
Example: To test between the ODU and the multiswitch, disconnect the cable connecting the ODU to the multiswitch and connect it to the AIM's ODU F connector.

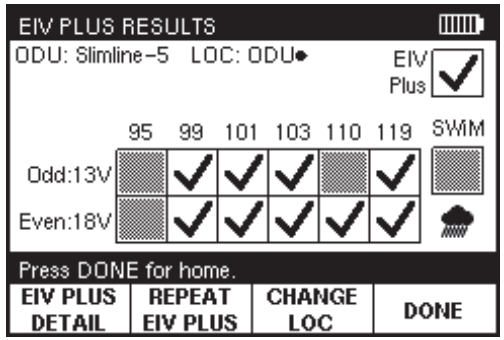


5 Use ◄ or ► to position the image of the AIM under the location where you are testing.

6 Connect the AIM ODU F connector at the location in the distribution network where you want to test. Then press **NEXT** to go to the **EIV PLUS TEST** screen.

If the installation includes two ODUs, the **EIV PLUS** screen appears. Use ▲ or ▼ to highlight the ODU for which you want to perform EIV Plus and press **SELECT** to go to the **EIV PLUS TEST** screen.





Note: If it is raining and the EIV Plus fails, you can enable Rain Mode to account for environmental conditions and continue troubleshooting. Press **Fn** and then **4** to enable **Rain Mode**. Press **Repeat Test** and wait for the results of the test.
The Rain Mode icon ( ) appears on the Results screen to indicate the test was run in Rain Mode. If the test fails again, the failure may be due to signal degradation from the rain, or there may an issue with the LNB.

7 On the **EIV PLUS TEST** screen, you can do one of the following:

– *To select an individual polarity for the EIV Plus,* press **OPTIONS**. On the **EIV OPTIONS** screen, use ▲ or ▼ to highlight the polarity for the EIV Plus. Then press **SELECT** to continue.

– *To add a note about the EIV Plus,* such as details about where the EIV Plus is being performed, press **NOTES**. Then enter the note following the instructions on page 35.

– *To run the test,* press **RUN EIV PLUS** and wait briefly for the results.

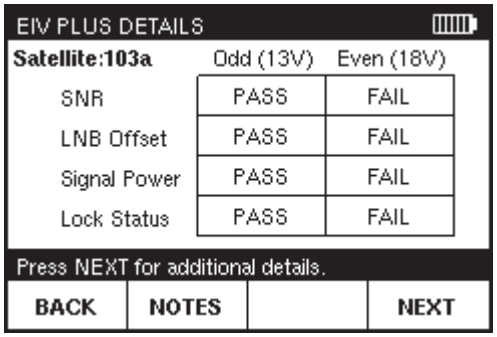
8 On the **EIV PLUS RESULTS** screen, review the results for all supported orbital slots and SWiM channels (if applicable). A satisfactory result is indicated by ✓. A problem is indicated by **X**. An inconclusive result is indicated by **–**.

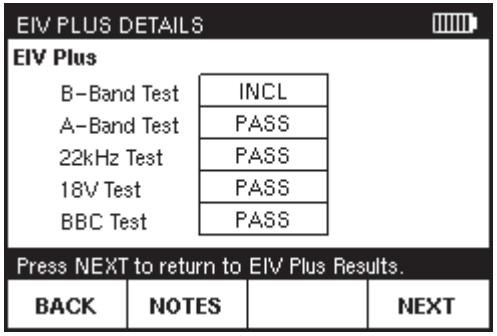
If ✓ appears for all supported orbital slots, the ODU alignment is acceptable.

*If **X** appears for an orbital slot*, perform the following steps:

a Press **REPEAT EIV PLUS** to confirm the problem.

b If **X** appears again for one or more orbital slots, you can press **EIV PLUS DETAIL** to determine which tests failed. Troubleshoot any failures following the instructions provided by DIRECTV.



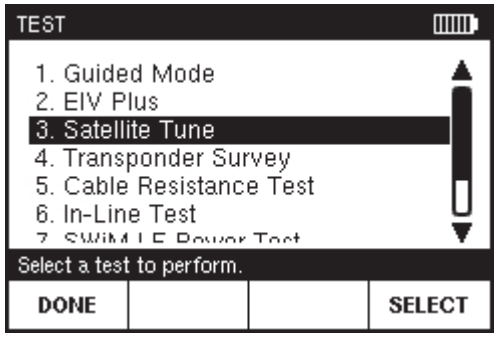


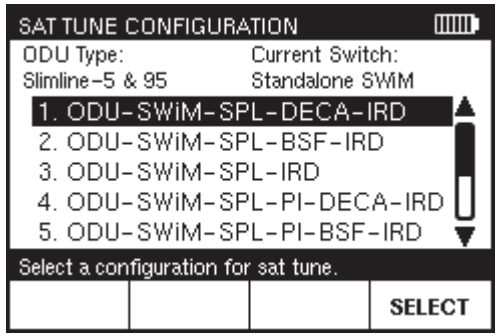
Note: On the **EIV PLUS DETAILS** screen, you can press **NEXT** to view the details for another orbital slot, or press **BACK** to scroll back through the details to the **EIV PLUS RESULTS** screen.

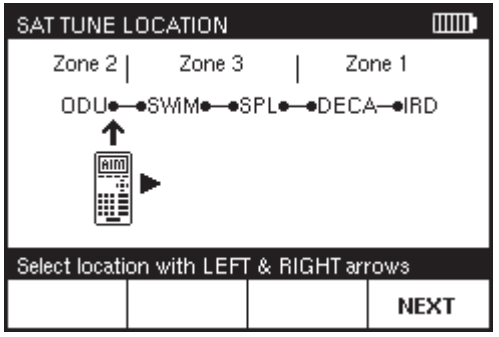
You also can press **NOTES** to add a note about the EIV Plus, following the instructions on page 35.

9 When you have finished reviewing EIV Plus results on the **EIV PLUS RESULTS** screen, you can press **DONE** to return to the **HOME** screen.

You also can press **CHANGE LOC** to perform EIV Plus for another location.







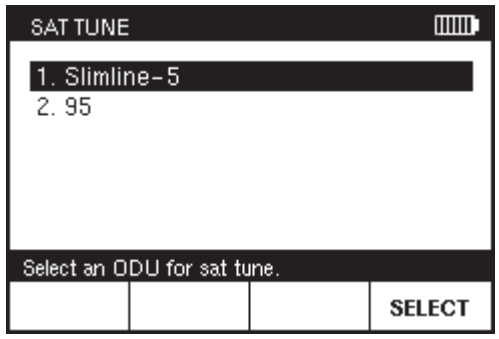
Performing a Satellite Tune Test

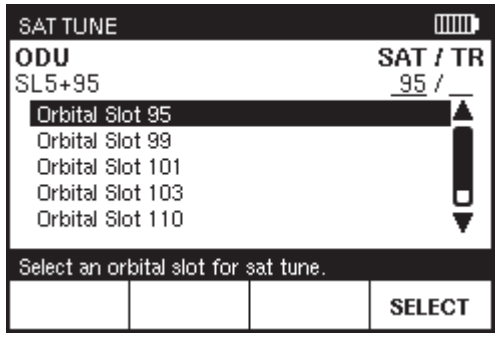
You can use the AIM's Satellite Tune feature to tune to any DIRECTV transponder. Connecting the AIM in different locations in the distribution network, you can progressively test each segment of the connection between the ODU and the IRD to locate a problem.

To perform a Satellite Tune test:

1. Start the job for the installation ("Starting a Job" on page 33).
2. From the **HOME** screen, press **TEST** to go to the **TEST** screen.
3. Use ▲ or ▼ to highlight **Satellite Tune** and press **SELECT** to go to the **SAT TUNE CONFIGURATION** screen.
4. Use ▲ or ▼ to highlight the equipment configuration for the installation and press **SELECT** to go to the **SAT TUNE LOCATION** screen.
5. Use ◄ or ► to position the image of the AIM under the location where you are testing.

Example: To test between the ODU and the multiswitch, disconnect the cable connecting the ODU to the multiswitch and connect it to the AIM's ODU F connector.





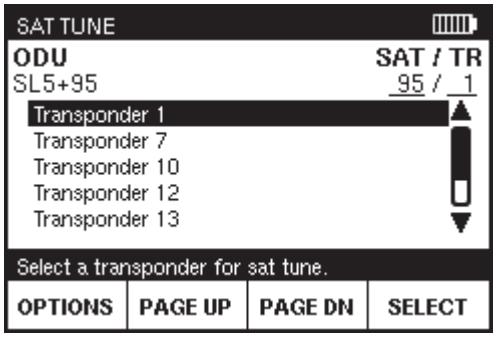
Note: You also can use the keypad to enter the orbital slot number.

6 Connect the AIM ODU F connector at the location in the distribution network where you want to test.

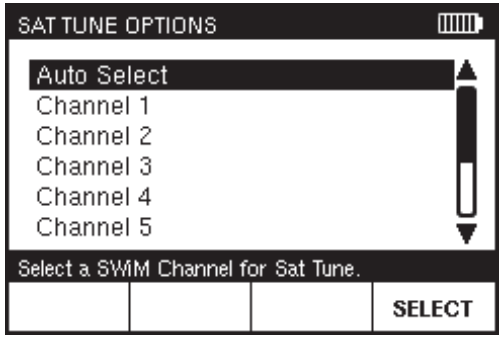
7 Press **NEXT** to go to the **SAT TUNE** screen.

8 *If the installation includes two ODUs*, use ▲ or ▼ to highlight the ODU to test and press **SELECT** to continue.

9 Use ▲ or ▼ to highlight the orbital slot to test and press **SELECT** to continue.



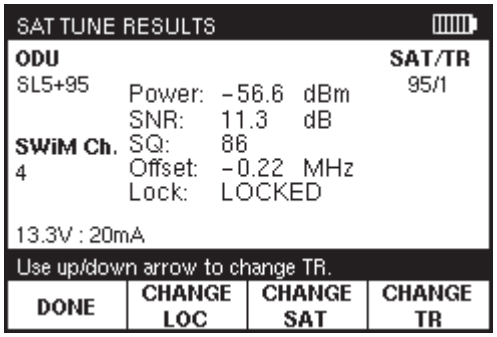
Note: You also can use the keypad to enter the transponder number. Use **PAGE UP** or **PAGE DN** to scroll quickly through the transponders.



10 *If you want to set the SWiM channel for the test,* do the following:

- **a** Press **OPTIONS**.
- **b** On the **SAT TUNE OPTIONS** screen, press **SELECT** to select **Set SWiM Ch. (Connect SWiM)**.
- **c** Use ▲ or ▼ to highlight the SWiM channel and press **SELECT**.

11 Use ▲ or ▼ to highlight the transponder to test. Then press **SELECT** and wait briefly for the results of the test.



Note: The **SAT TUNE RESULTS** screen automatically updates to show the most recent test results for the transponder.

12 On the **SAT TUNE RESULTS** screen, review the results of the test. The screen shows:

- **Power** of the transponder signal (in dBm—power ratio in decibels of the measured power referenced to one milliwatt).
- Measurement of the signal-to-noise ratio, expressed as **SNR** in decibels.
- Measurement of the signal quality, expressed as an **SQ** value between 0 and 100.
- Frequency **offset** of the transponder signal from its expected frequency (in megahertz).
- Indication as to whether the transponder signal is above the power **lock** threshold.

13 Troubleshoot any problems following the instructions provided by DIRECTV.

a *To repeat the test at a different location*, press **CHANGE LOC**. Then go to Step 5.

b *To repeat the test at a different orbital slot*, press **CHANGE SAT**. Then go to Step 9.

c *To repeat the test at a different transponder*, press **CHANGE TR**. Then go to Step 10.

To repeat the test for a sequential transponder, use ▲ or ▼ to change the transponder number to the next or previous transponder. The **SAT TUNE RESULTS** screen updates to show the results of the test for the selected transponder.

14 Press **DONE** to return to the **TEST** screen.

Performing a Transponder Survey

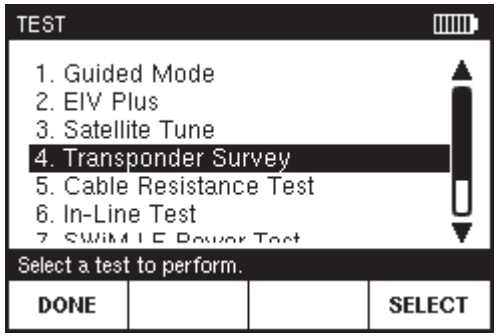
You can use the AIM's Transponder Survey feature to record the signal power, signal-to-noise ratio (SNR), frequency offset, and lock status for all transponders that can be received using the selected equipment. This can help to determine the location of a problem for an installation. Connecting the AIM in the distribution network, you can progressively test each segment of the connection between the ODU and the IRD to locate a problem.

To perform a Transponder Survey:

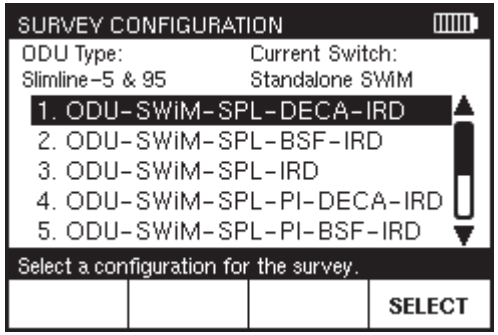
1 Start the job for the installation ("Starting a Job" on page 33).

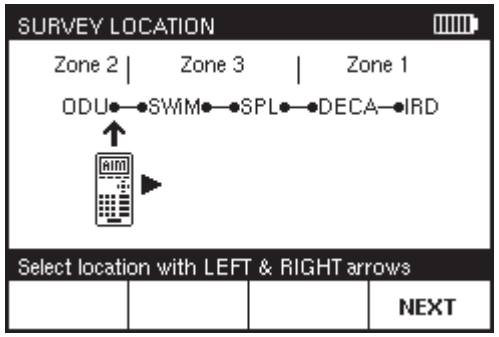
2 From the **HOME** screen, press **TEST** to go to the **TEST** screen.

3 Use ▲ or ▼ to highlight **Transponder Survey** and press **SELECT** to go to the **SURVEY CONFIGURATION** screen.

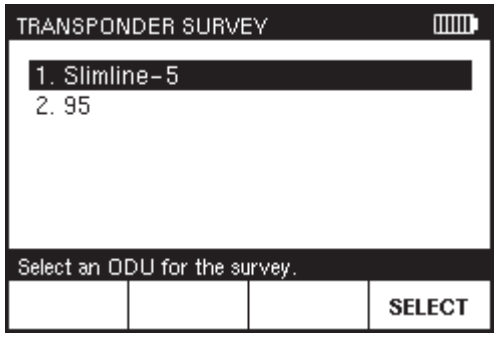


4 Use ▲ or ▼ to highlight the equipment configuration for the installation and press **SELECT** to go to the **SURVEY LOCATION** screen.





Example: To test between the ODU and the multiswitch, disconnect the cable connecting the ODU to the multiswitch and connect it to the AIM's ODU F connector.

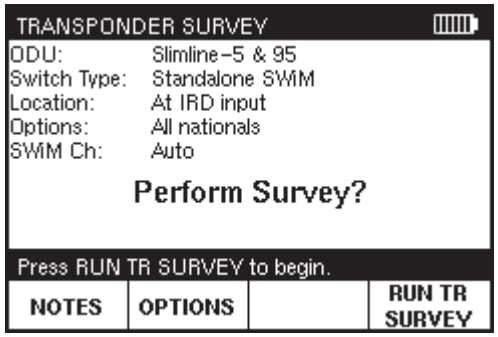


5 Use ◄ or ► to position the image of the AIM under the location where you are testing.

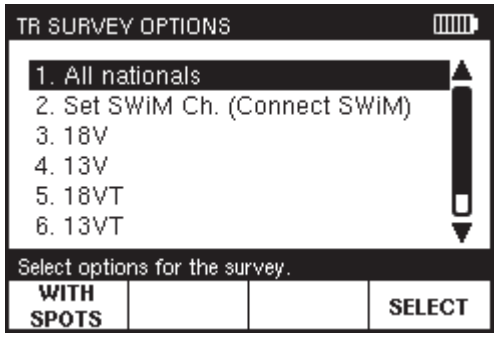
6 Connect the AIM ODU F connector at the location in the distribution network where you want to test.

7 Press **NEXT** to go to the **TRANSPONDER SURVEY** screen.

8 *If the installation includes two ODUs*, use ▲ or ▼ to highlight the ODU to test and press **SELECT** to continue.



Note: To add a note about the transponder survey, such as details about where the survey is being performed, press **NOTES**. Then enter the note following the instructions on page 35.



Note: To test spot transponders in the survey, press **WITH SPOTS**. To remove spot transponders from the survey, press **WITHOUT SPOTS**.

9 *If you want to select an individual polarity for the transponder survey,* do the following:

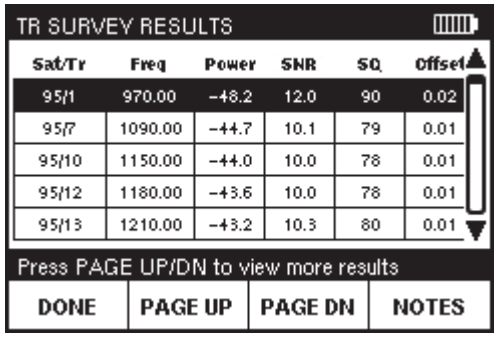
- **a** Press **OPTIONS**.
- **b** On the **TR SURVEY OPTIONS** screen, use ▲ or ▼ to highlight the polarity for the survey.
- **c** To continue, press **SELECT** to go to the **TRANSPONDER SURVEY** screen.

10 *If you want to set the SWiM channel for the transponder survey,* do the following:

- **a** Press **OPTIONS**.
- **b** On the **TR SURVEY OPTIONS** screen, use ▲ or ▼ to highlight **Set SWiM Ch. (Connect SWiM)**.
- **c** Use ▲ or ▼ to highlight the SWiM channel and press **SELECT** to go to the **TRANSPONDER SURVEY** screen.

11 Press **RUN TR SURVEY** to start the test. The screen indicates each orbital slot and transponder as they are scanned.

12 When the scan test is complete, press **VIEW** to go to the **TR SURVEY RESULTS** screen.



Tip: Use **PAGE UP** and **PAGE DN** to scroll quickly through test results. Press ◄ or ► to navigate through the columns.

13 Use ▲ or ▼to review the results of the test. The screen shows the following information for each transponder:

- **Frequency** of the transponder signal.
- **Power** of the transponder signal (in dBm—power ratio in decibels of the measured power referenced to one milliwatt).
- Measurement of the signal-to-noise ratio, expressed as **SNR** in decibels.
- Measurement of the signal quality, expressed as an **SQ** value between 0 and 100.
- Frequency **offset** of the transponder signal from its expected frequency (in megahertz).
- Indication whether the transponder signal is above the power **lock** threshold.
- **Voltage** supplied (in volts).
- **Current** supplied (in milliamps).
- **ODU** used.
- **SWiM** channel used.

14 Troubleshoot any problems following the instructions provided by DIRECTV.

To repeat the test at a different location, press **CHANGE LOC**.

15 Press **DONE** to return to the **TEST** screen.

Performing a Cable Resistance Test

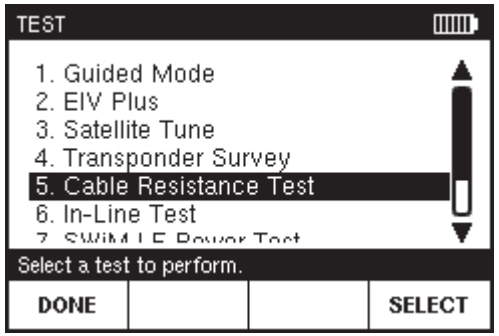
You can use the AIM's Cable Resistance test feature to help determine whether there is a problem with a cable used in the distribution network. To complete this test, you must use the 25 Ω Cable Test Load (provided with the AIM). By placing the Cable Test Load on the end of a cable, you can determine the resistance value for the cable. A high resistance value indicates that the cable may have been inadvertently cut. A low resistance value indicates that the cable may have a short.

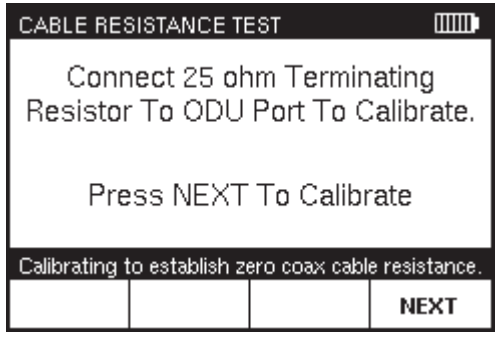
To perform a Cable Resistance test:

1 Start the job for the installation ("Starting a Job" on page 33).

2 From the **HOME** screen, press **TEST** to go to the **TEST** screen.

3 Use ▲ or ▼ to highlight **Cable Resistance Test** and press **SELECT** to go to the **CABLE RESISTANCE TEST** screen.




CABLE RESISTANCE TEST
Connect 25 ohm Terminating Resistor To ODU Port To Calibrate.
Press NEXT To Calibrate
Calibrating to establish zero coax cable resistance.
NEXT

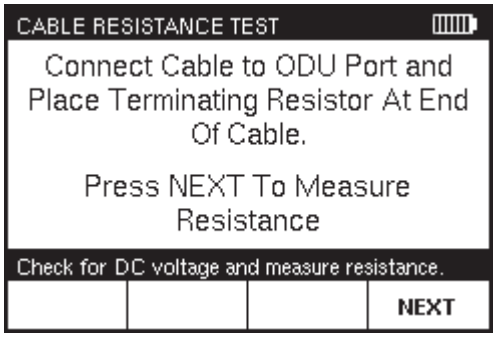
4 Connect the 25 Ω Cable Test Load to the AIM ODU F connector.

5 Press **NEXT** to confirm the resistance of the Cable Test Load.

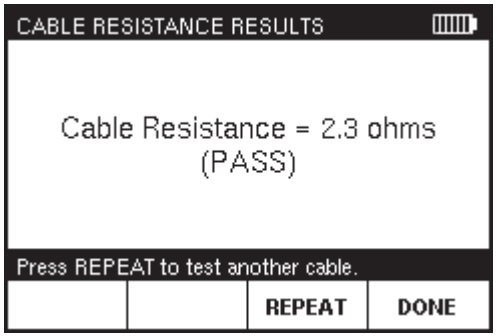
If the resistance is outside of the allowable range, a message appears. Perform the following steps:

a Press **RE-TEST** to confirm the problem.

b If the resistance is still outside of the range, the Cable Test Load has failed. Replace the Cable Test Load and re-start the Cable Resistance test.


CABLE RESISTANCE TEST
Connect Cable to ODU Port and Place Terminating Resistor At End Of Cable.
Press NEXT To Measure Resistance
Check for DC voltage and measure resistance.
NEXT

Note: If a message appears stating that DC voltage was detected, the cable is not connected to the Cable Test Load. Make sure you are testing the appropriate cable, then press **NEXT** to continue the test.



6 Connect the Cable Test Load to one end of the cable you want to test. Then connect the other end of the cable to the AIM ODU F connector.

7 Press **NEXT** and wait briefly for the results of the test.

8 On the **CABLE RESISTANCE RESULTS** screen, review the resistance of the cable in ohms, adjusted for the 25 Ω Cable Test Load.

9 Troubleshoot any problems following the instructions provided by DIRECTV.

To repeat the Cable Resistance test, press **REPEAT**.

10 Press **DONE** to return to the **TEST** screen.

Performing an In-Line Test

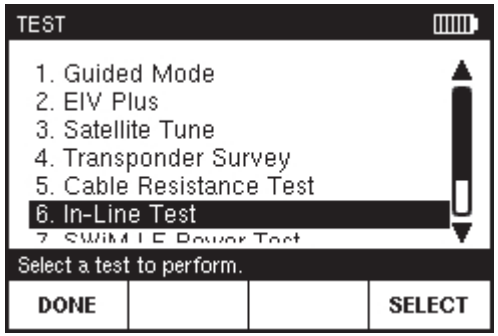
You can use the AIM's In-Line test feature to help determine the cause of a problem in an installation. Connecting the AIM in series with the equipment, you can progressively test each segment of the connection between the ODU and the IRD to locate a problem. The AIM can measure the voltage, current, and 22 kHz signals to verify that the correct control signals are being transmitted through the coaxial cable.

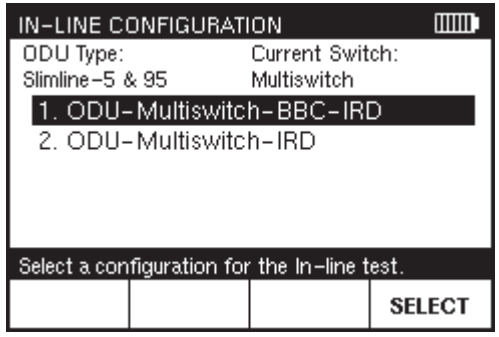
To perform an In-Line test:

1 Start the job for the installation ("Starting a Job" on page 33).

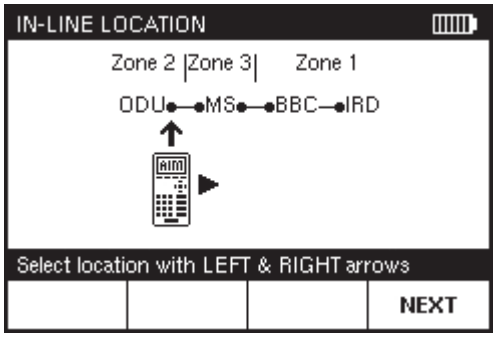
2 From the **HOME** screen, press **TEST** to go to the **TEST** screen.

3 Use ▲ or ▼ to highlight **In-Line Test** and press **SELECT** to go to the **IN-LINE CONFIGURATION** screen.

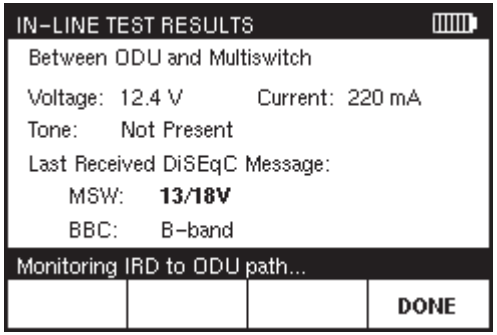




4 Use ▲ or ▼ to highlight the equipment configuration for the installation and press **SELECT** to go to the **IN-LINE LOCATION** screen.



Example: To test between the ODU and the multiswitch, disconnect the cable connecting the ODU to the multiswitch and connect it to the AIM's ODU F connector. Then connect the AIM's IRD F connector to the multiswitch.



Note: As messages are received from the multiswitch (MSW) and BBC, the multiswitch port and BBC frequency range flash bold. If no messages are received, "N/A" appears.

5 Use ◄ or ► to position the image of the AIM under the location where you are testing.

6 Connect the AIM in series with the equipment at the location where you want to test.

7 Press **NEXT** and wait briefly for the results of the test.

8 On the **IN-LINE TEST RESULTS** screen, review the results of the test. The screen indicates whether the test passed or failed. The screen also shows:

- **Voltage** supplied (in volts).
- **Current** supplied (in milliamps).
- If present, amplitude of the 22 kHz **tone**.
- Indication as to whether **DiSEqC** commands are being received by the multiswitch (**MSW**) and **BBC**.

9 Troubleshoot any problems following the instructions provided by DIRECTV.

10 Press **DONE** to return to the **TEST** screen.

Performing a SWiM LF Power Test

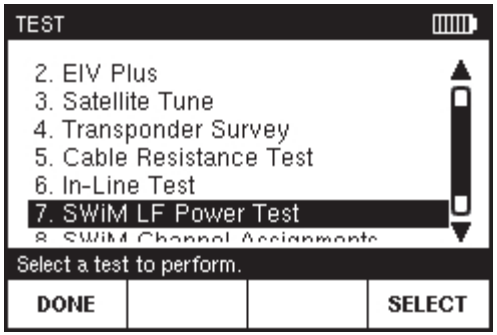
You can use the AIM's SWiM LF Power test feature to determine whether there is a communications problem between the SWiM and the IRD. To perform this test, disconnect all IRDs in the distribution network, then connect the AIM in place of an IRD. The AIM determines whether the SWiM LF Power level is sufficient.

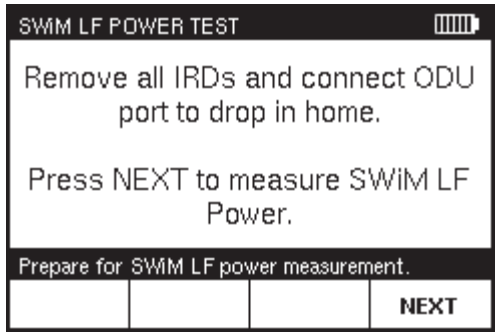
To perform a SWiM LF Power test:

1 Start the job for the installation ("Starting a Job" on page 33).

2 From the **HOME** screen, press **TEST** to go to the **TEST** screen.

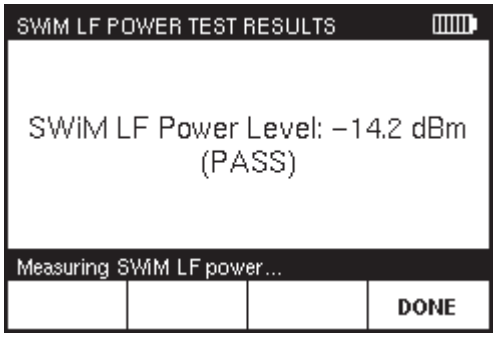
3 Use ▲ or ▼ to highlight **SWiM LF Power Test** and press **SELECT** to go to the **SWiM LF POWER TEST** screen.




SWiM LF POWER TEST
Remove all IRDs and connect ODU port to drop in home.
Press NEXT to measure SWiM LF Power.
Prepare for SWiM LF power measurement.
NEXT

4 Disconnect all IRDs in the distribution network. Then connect the AIM in place of an IRD.

5 Press **NEXT** and wait briefly for the results of the test.



Note: The **SWiM LF POWER TEST RESULTS** screen automatically updates to show the most recent test results.

6 On the **SWiM LF POWER TEST RESULTS** screen, review the results of the test. The screen shows whether the SWiM LF power level is sufficient.

7 Troubleshoot any problems following the instructions provided by DIRECTV.

To repeat the SWiM LF Power test in case of a failure, press **RETRY**.

8 Press **DONE** to return to the **TEST** screen.

Performing a SWiM Channel Assignments Test

You can use the AIM's SWiM Channel Assignments test feature to view the Receiver IDs (RIDs) and assigned SWiM channels for each IRD in the installation. If you suspect that the network could be oversubscribed, the results show whether all available SWiM channels are used, indicating the possibility that the number of IRDs in the network exceeds the SWiM's capacity.

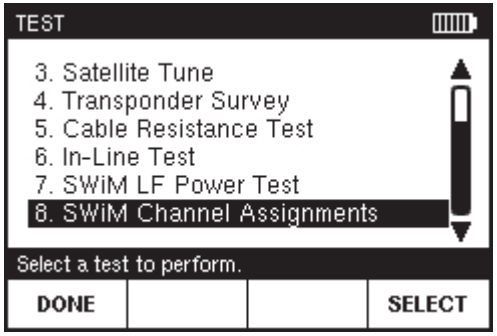
To perform this test, connect the AIM at any point in the distribution network between the SWiM and the IRD. Power for the SWiM must be provided by an external power inserter, since the AIM cannot be used to provide power during the test.

To perform a SWiM Channel Assignments test:

1 Start the job for the installation ("Starting a Job" on page 33).

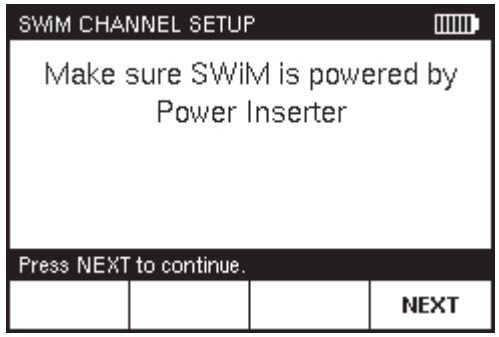
2 From the **HOME** screen, press **TEST** to go to the **TEST** screen.

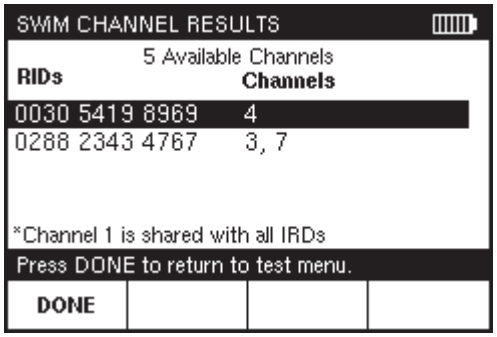
3 Use ▲ or ▼ to highlight **SWiM Channel Assignments** and press **SELECT** to go to the **SWiM CHANNEL SETUP** screen.



4 Connect the AIM ODU F connector at any point in the distribution network between the SWiM and the IRD. Make sure that power for the SWiM is provided by an external power inserter.

5 Press **NEXT** and wait briefly for the results of the test.





6 On the **SWiM CHANNEL RESULTS** screen, review the results. For each IRD in the network, the screen shows the RID and the SWiM channel used. The number of available SWiM channels is also indicated.

7 Troubleshoot any problems following the instructions provided by DIRECTV.

8 Press **DONE** to return to the **TEST** screen.

7 Managing Records

The AIM stores information for each account, including the results for each EIV, EIV Plus, Guided Mode test, and Transponder Survey. Screenshots are also stored as records. For all accounts, you can:

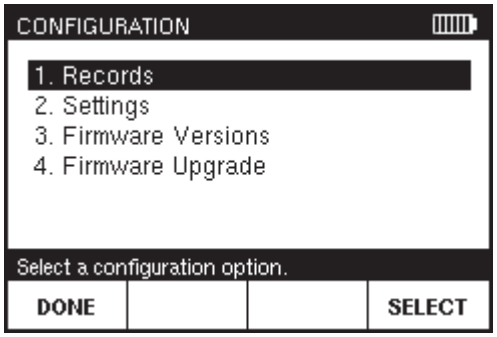
- view records (see page 81)
- delete records (see page 84)
- transfer records to and from a USB flash drive (see page 87).

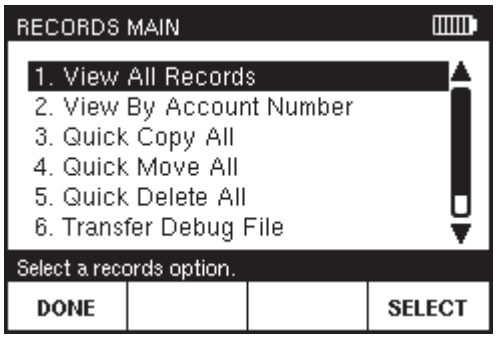
The AIM can hold up to 100 records for each record type. When there are 100 stored records for a particular record type and a new record is added, the oldest record of that type is deleted.

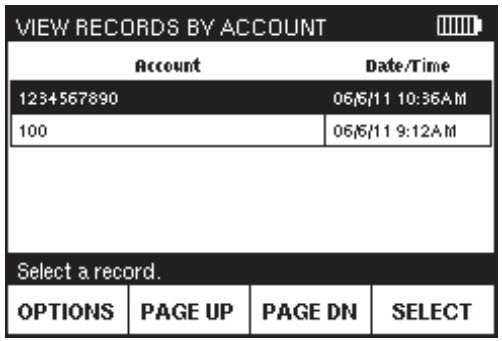
Understanding Records

The AIM stores the following types of records:

- **EIV:** contains test results and data for a particular EIV.
- **EIV+:** contains test results and data for a particular EIV Plus.
- **Guided:** contains test results and data for a particular Guided Mode test.
- **Survey:** contains test results and data for a particular Transponder Survey.
- **Image:** contains the thumbnail screenshot, as well as the date and time the image was taken and the associated account number.







Viewing Records

You can view records for tests performed on the AIM, including EIV, EIV Plus, Guided Mode, and Transponder Survey, as well as screenshots. You can select a record to view from a list of all records on the AIM, or view records by account number.

To view records:

1 Press **CONFIG** to go to the **CONFIGURATION** screen.

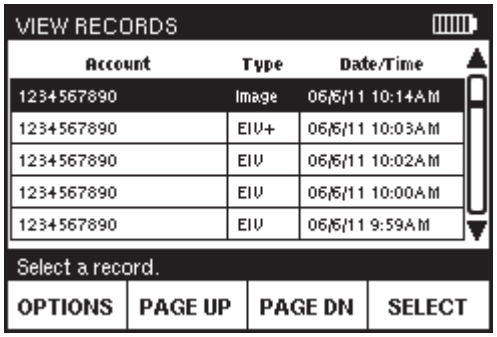
2 Use ▲ or ▼ to highlight **Records** and press **SELECT** to go to the **RECORDS MAIN** screen.

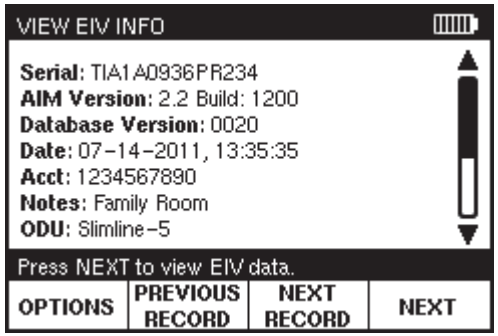
3 Use ▲ or ▼ to highlight **View All Records** and press **SELECT** to go to the **VIEW RECORDS** screen.

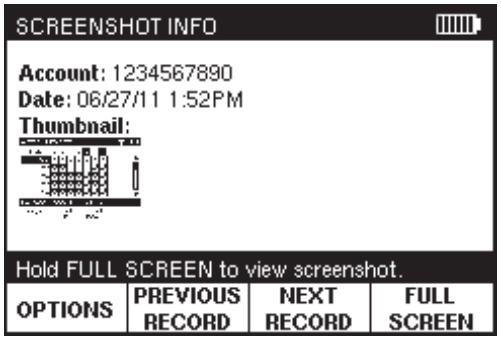
Alternatively, if you want to view records for a selected account number, do the following:

a Use ▲ or ▼ to highlight **View By Account Number** and press **SELECT** to go to the **VIEW RECORDS BY ACCOUNT** screen.

b Use ▲ or ▼ to highlight the account number you want to view and press **SELECT** to go to the **VIEW RECORDS** screen.



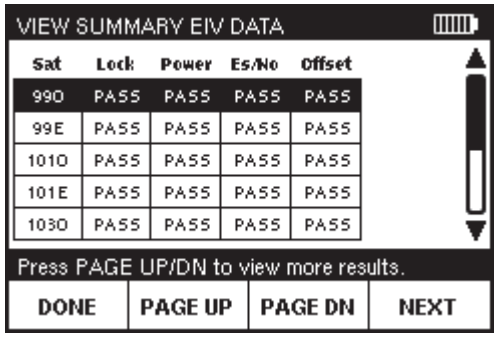


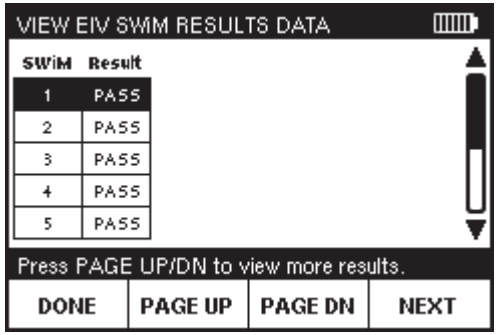


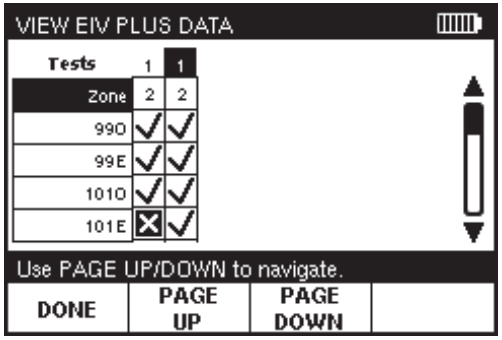
4 Use ▲ or ▼ to highlight the record you want to view and press **SELECT**. The **VIEW INFO** screen for the selected record appears.

5 On the **VIEW INFO** screen, you can do the following (example screens are shown):

- Copy, move, or delete the record by pressing **OPTIONS**. On the Options window, you can use ▲ or ▼ to highlight the action you want to perform and press **OK**.
- View the next or previous record by pressing **NEXT RECORD** or **PREVIOUS RECORD**.
- *For a test record,* view the results of the test on the **VIEW DATA** screens for the selected record by pressing **NEXT**.
- *For a screenshot,* press and hold **FULL SCREEN** to view the full image on the **SCREENSHOT INFO** screen.







Tip: If the column header for an EIV Plus or Guided Mode test is black with white text, this indicates that the test was run in Rain Mode.

6 On the **VIEW DATA** screens, you can do the following (example screens are shown):

– Scroll through the results using **PAGE UP** and **PAGE DN**.

– View the next data screen by pressing **NEXT**.

– Return to the **VIEW RECORDS** screen by pressing **DONE**.

For more details on results for a specific test, see "Performing EIV" on page 49 (for EIV) or "Performing Other Network Tests" on page 52 (for EIV Plus, Guided Mode, or Transponder Survey).

Deleting Records

You can delete records stored on the AIM, including:

- An individual record
- All records for a selected account
- All records for all accounts
- All records of a selected type (EIV, EIV Plus, Guided Mode, Transponder Survey, or Screenshots).

To delete records:

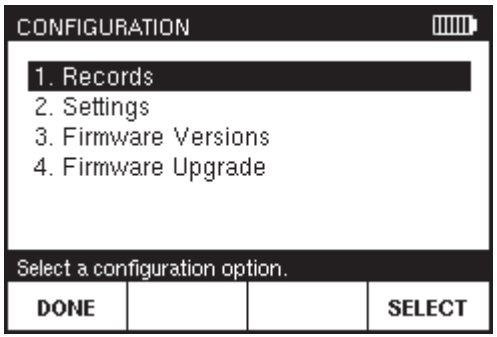
1 Press **CONFIG** to go to the **CONFIGURATION** screen.

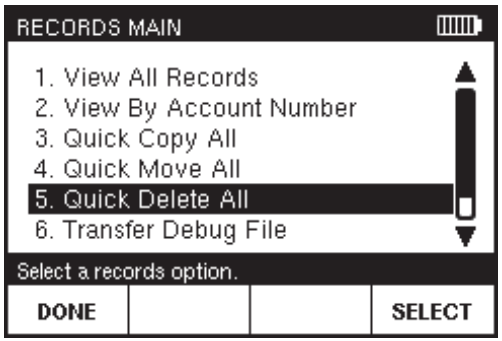
2 Use ▲ or ▼ to highlight **Records** and press **SELECT** to go to the **RECORDS MAIN** screen. Then highlight one of the following:

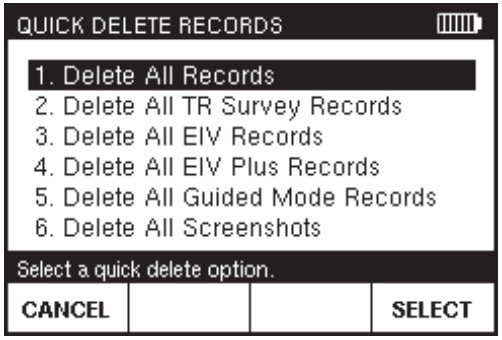
– *To delete all records on the AIM or records of a selected type,* highlight **Quick Delete All** and press **SELECT**. Go to Step 3.

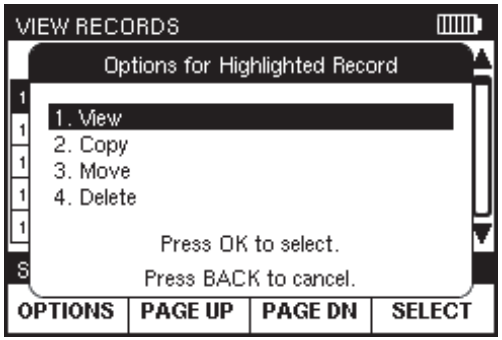
– *To delete an individual record,* highlight **View All Records** and press **SELECT**. Go to Step 4.

– *To delete all records for an account,* highlight **View By Account Number** and press **SELECT**. Go to Step 5.






QUICK DELETE RECORDS
1. Delete All Records
2. Delete All TR Survey Records
3. Delete All EIV Records
4. Delete All EIV Plus Records
5. Delete All Guided Mode Records
6. Delete All Screenshots
Select a quick delete option.
CANCEL
SELECT



3 To delete all records on the AIM or records of a selected type, do the following on the **QUICK DELETE RECORDS** screen:

a Use ▲ or ▼ to highlight the type of records to delete and press **SELECT**. You can select **Delete All Records** to delete all records on the AIM, or select a specific type of records to delete.

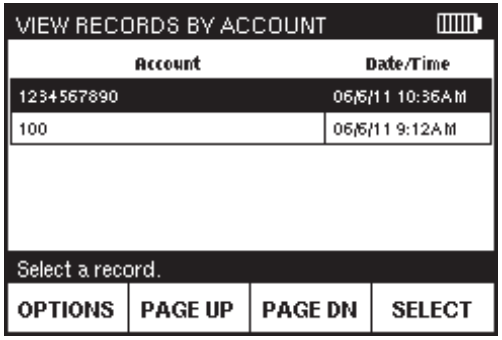
b Go to Step 6.

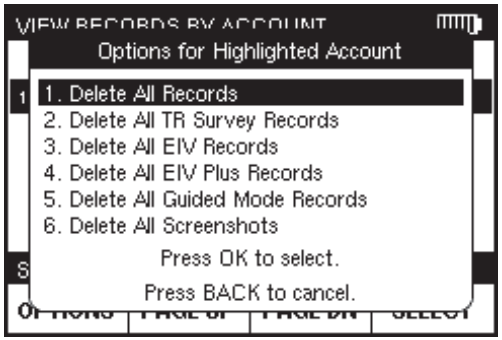
4 To delete an individual record, do the following on the **VIEW RECORDS** screen:

a Use ▲ or ▼ to highlight the record to delete and press **OPTIONS**.

b On the **Options** window, use ▲ or ▼ to highlight **Delete** and press **OK**.

c Go to Step 6.




Options for Highlighted Account
1. Delete All Records
2. Delete All TR Survey Records
3. Delete All EIV Records
4. Delete All EIV Plus Records
5. Delete All Guided Mode Records
6. Delete All Screenshots
Press OK to select.
Press BACK to cancel.

5 To delete all records for an account, do the following on the **VIEW RECORDS BY ACCOUNT** screen.

a Use ▲ or ▼ to highlight the account number and press **OPTIONS**.

b On the **Options** window, use ▲ or ▼ to highlight **Delete...** and press **OK**.

c Use ▲ or ▼ to highlight the type of records to delete and press **OK**. You can select **Delete All Records** to delete all records for the account, or select a specific type of records to delete.

d Go to Step 6.

6 On the message that appears to confirm the deletion, press **OK**.

The records are deleted. Press **OK** again to acknowledge the deletion, and the **RECORDS MAIN**, **VIEW RECORDS**, or **VIEW RECORDS BY ACCOUNT** screen appears.

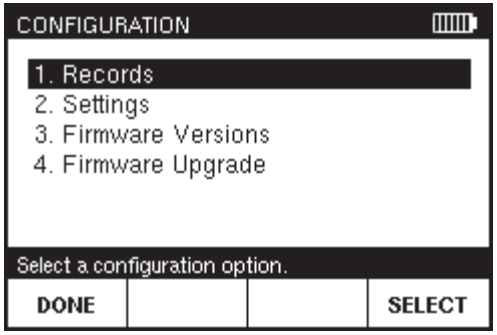
Transferring Records

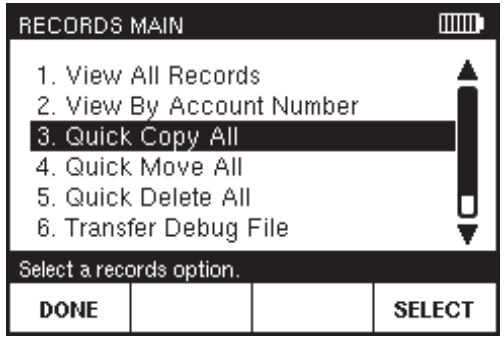
You can transfer records from your AIM to a PC using a USB flash drive. You also can transfer records from a USB flash drive to the AIM (see page 90). You can transfer:

- An individual record
- All records for a selected account
- All records for all accounts
- All records of a selected type (EIV, EIV Plus, Guided Mode, Transponder Surveys, or Screenshots).

When transferring records between the AIM and a USB flash drive, you can choose from two options:

- *To retain a copy of the records on the device you are transferring from,* select **Copy**.
- *To permanently delete the records from the device you are transferring from,* select **Move**.





To transfer records from the AIM to a USB flash drive:

1 Insert the USB flash drive in the appropriate USB connector on the meter.

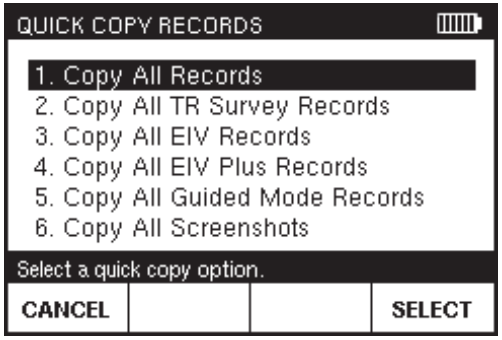
2 Press **CONFIG** to go to the **CONFIGURATION** screen.

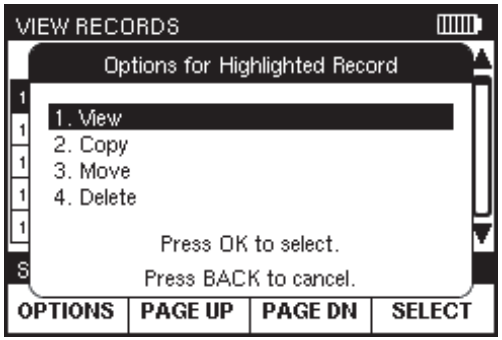
3 Use ▲ or ▼ to highlight **Records** and press **SELECT** to go to the **RECORDS MAIN** screen. Then highlight one of the following options:

   – *To transfer all records on the AIM or records of a selected type,* highlight **Quick Copy All** or **Quick Move All** and press **SELECT**. Go to Step 4.

   – *To transfer an individual record,* highlight **View All Records** and press **SELECT**. Go to Step 5.

   – *To transfer all records for an account,* highlight **View By Account Number** and press **SELECT**. Go to Step 6.


QUICK COPY RECORDS
1. Copy All Records
2. Copy All TR Survey Records
3. Copy All EIV Records
4. Copy All EIV Plus Records
5. Copy All Guided Mode Records
6. Copy All Screenshots
Select a quick copy option.
CANCEL
SELECT



4 To transfer all records on the AIM or records of a selected type, do the following on the **QUICK COPY RECORDS** (or **QUICK MOVE RECORDS**) screen:

a Use ▲ or ▼ to highlight the type of records to transfer and press **SELECT**. You can select **Copy All Records** (or **Move All Records**) to transfer all records on the AIM, or select a specific type of records to transfer.

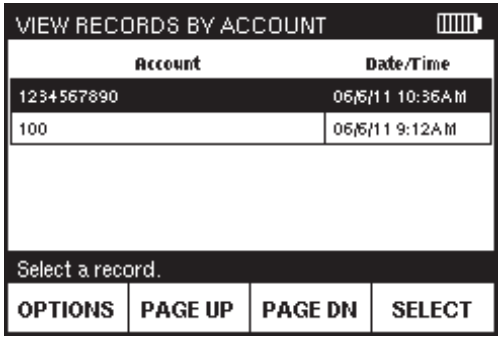
b Go to Step 7.

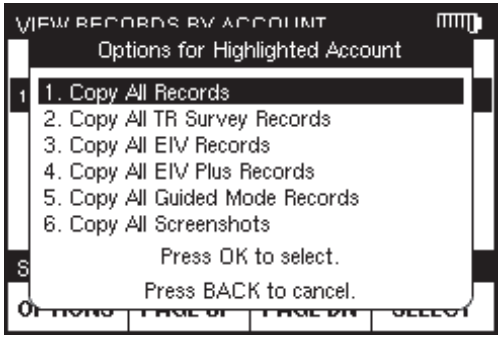
5 To transfer an individual record, do the following on the **VIEW RECORDS** screen:

a Use ▲ or ▼ to highlight the record to transfer and press **OPTIONS**.

b On the **Options** window, use ▲ or ▼ to highlight **Copy** or **Move** and press **OK**.

c Go to Step 7.




Options for Highlighted Account
1. Copy All Records
2. Copy All TR Survey Records
3. Copy All EIV Records
4. Copy All EIV Plus Records
5. Copy All Guided Mode Records
6. Copy All Screenshots
Press OK to select.
Press BACK to cancel.

6 To transfer all records for an account, do the following on the **VIEW RECORDS BY ACCOUNT** screen:

   a Use ▲ or ▼ to highlight the account number and press **OPTIONS**.

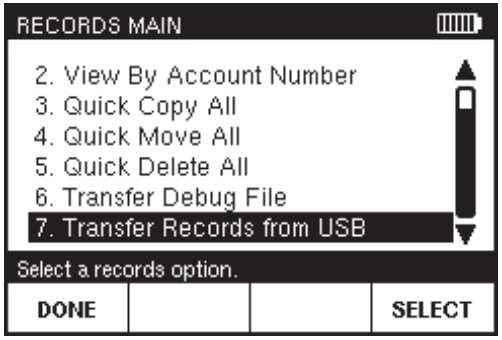
   b On the **Options** window, use ▲ or ▼ to highlight **Copy...** or **Move...** and press **OK**.

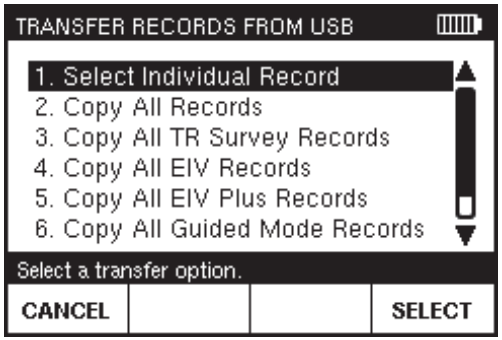
   c Use ▲ or ▼ to highlight the type of records to transfer and press **OK**. You can select **Copy All Records** or **Move All Records** to transfer all records for the account, or select a specific type of records to transfer.

   d Go to Step 7.

7 On the message that appears to confirm the transfer, press **OK**.

   The records are transferred, and the **RECORDS MAIN**, **VIEW RECORDS**, or **VIEW RECORDS BY ACCOUNT** screen appears.




TRANSFER RECORDS FROM USB
1. Select Individual Record
2. Copy All Records
3. Copy All TR Survey Records
4. Copy All EIV Records
5. Copy All EIV Plus Records
6. Copy All Guided Mode Records
Select a transfer option.
CANCEL
SELECT

Note: You also can view, move, or delete an individual record from the **Options** screen. Press **OPTIONS**, use ▲ or ▼ to highlight the desired option, and press **OK**.

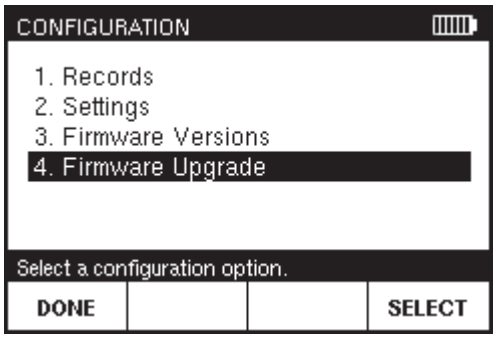
To transfer records from a USB flash drive to the AIM:

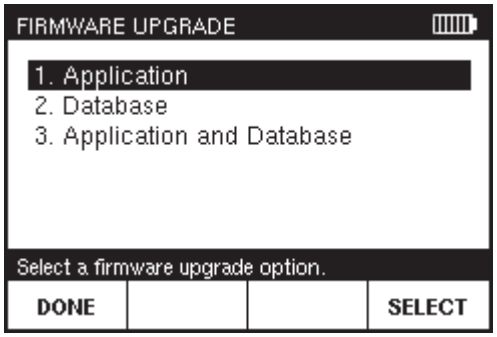
1. Insert the USB flash drive in the appropriate USB connector on the meter.
2. Press **CONFIG** to go to the **CONFIGURATION** screen.
3. Use ▲ or ▼ to highlight **Records** and press **SELECT** to go to the **RECORDS MAIN** screen.
4. Use ▲ or ▼ to highlight **Transfer Records from USB** and press **SELECT** to go to the **TRANSFER RECORDS FROM USB** screen. Then highlight one of the following options:
   - *To copy an individual record*, use ▲ or ▼ to highlight **Select Individual Record** and press **SELECT**. Use ▲ or ▼ to highlight the record to copy and press **SELECT**.
   - *To copy all records from the USB drive*, use ▲ or ▼ to highlight **Copy All Records** and press **SELECT**.
   - *To copy all records of a selected type from the USB drive*, use ▲ or ▼ to highlight the type of records to copy and press **SELECT**.
5. On the message that appears to confirm your transfer, press **OK**.

   The records are transferred to the AIM, and the **RECORDS MAIN** or **TRANSFER RECORDS FROM USB** screen appears.

8 Updating the Meter

Tip: To view the current AIM firmware version, press **CONFIG** to go to the **Configuration** screen. Then use ▲ or ▼ to highlight **Firmware Versions** and press **SELECT**.





You can update your AIM as new features become available. You can update the AIM application, the AIM's database (which includes reference information used by the AIM), or both the application and database.

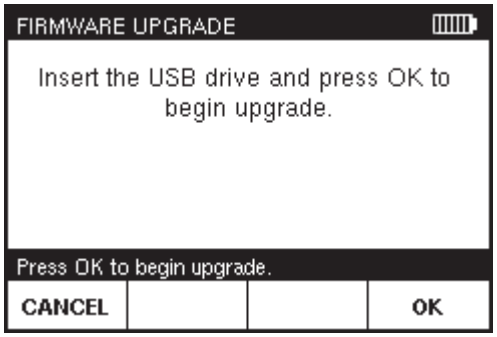
You can update the meter firmware without plugging the AIM into a power outlet, as long as the battery icon on the display shows at least two remaining bars of power. If the battery icon shows less than two bars of power, the meter must be plugged into a power outlet using the AC power adapter.

To update the firmware:

1 Press **CONFIG** to go to the **CONFIGURATION** screen.

2 Use ▲ or ▼ to highlight **Firmware Upgrade** and press **SELECT** to go to the **FIRMWARE UPGRADE** screen.

3 Use ▲ or ▼ to highlight the type of update you want to perform and press **SELECT**.



4 Insert the USB flash drive that contains the firmware upgrade in the appropriate USB connector on the meter. Wait for 15 seconds, then press **OK**.

The firmware update process begins. A message appears when the firmware update is complete.

5 Press **OK** to turn off and restart the meter.

After the meter turns on and the **HOME** screen appears, you can remove the USB flash drive from the meter's USB connector.

A Glossary

azimuth	The angular distance (side to side) from true north along the horizon of an ODU to a selected satellite.
BBC	B-band Converter A Ka-band RF converter that allows viewing of high definition channels with some IRDs.
dithering	A process used with Slimline ODUs to make fine adjustments in the azimuth and elevation directions to hone signal power.
EIV	Extended Installation Verification An automated process for using the AIM to confirm proper alignment of an ODU.
EIV Plus	A series of tests to help quickly identify potential problems with an installation. Performs the same tests as in Guided Mode, but requires the user to interpret the results and determine the next steps for troubleshooting (instead of providing a recommendation).
elevation	The angular distance (up and down) above the horizon of an ODU to a selected satellite.
Guided Mode	An optimized troubleshooting process to identify equipment failures in an installation using the AIM's built-in intelligence.
IRD	Integrated Receiver Decoder Integrated receiver with a built-in decoder for unscrambling subscription channels. Also called satellite receiver and set-top box.

LNB	Low-Noise Block Downconverter Component located at the end of the arm projecting from an ODU that receives the signals sent by the satellite and converts them to a lower frequency that can be accepted by a compatible satellite receiver.
multiswitch	Device that splits up the satellite feed without compromising quality to support multiple IRDs.
ODU	Out-Door Unit Term used to collectively refer to the satellite equipment, including the satellite dish, that is placed outside a building.
orbital slots	The location of geostationary satellites around the globe.
Rain Mode	A setting that can be enabled to account for environmental conditions and allow for continued troubleshooting during Guided Mode and EIV Plus.
signal power	A measure of the strength of the radio frequency signal being received from a selected satellite transponder.
signal-to-noise ratio (SNR)	A measure of the received signal strength relative to the strength of the received noise, which is an indication of the quality of the signal (in dB).
SWiM	Single-Wire Multiswitch Technology that allows distribution of satellite signals on a single cable.

tilt	Rotational adjustment to compensate for the Earth's curvature between the ODU and a satellite's signal beam.
transponder	A receiver/transmitter on a satellite, which receives a microwave signal from earth, amplifies it, and retransmits it back to earth at a different frequency. A satellite has several transponders.

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